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VERBUM

THE FASHIONABLE PC

A VERBUM REPORT

VERBUM
2.2
JOURNAL
OF
PERSONAL
COMPUTER
AESTHETICS

Desktop Music: Sound Sampling Sensation

Mel Ristau's Postscript Glyph Art

Georganne Deen Paints Oingo Boingo

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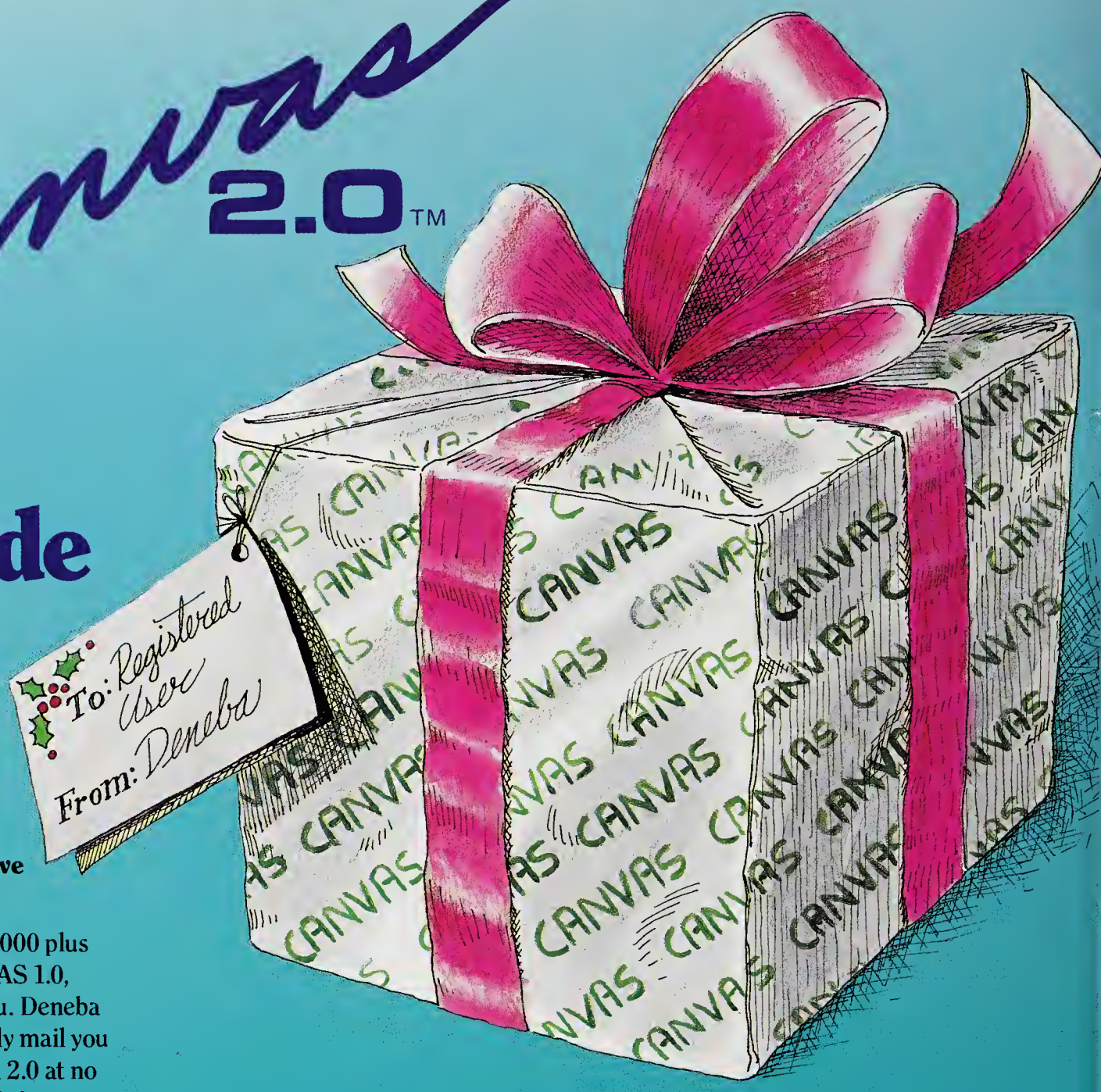

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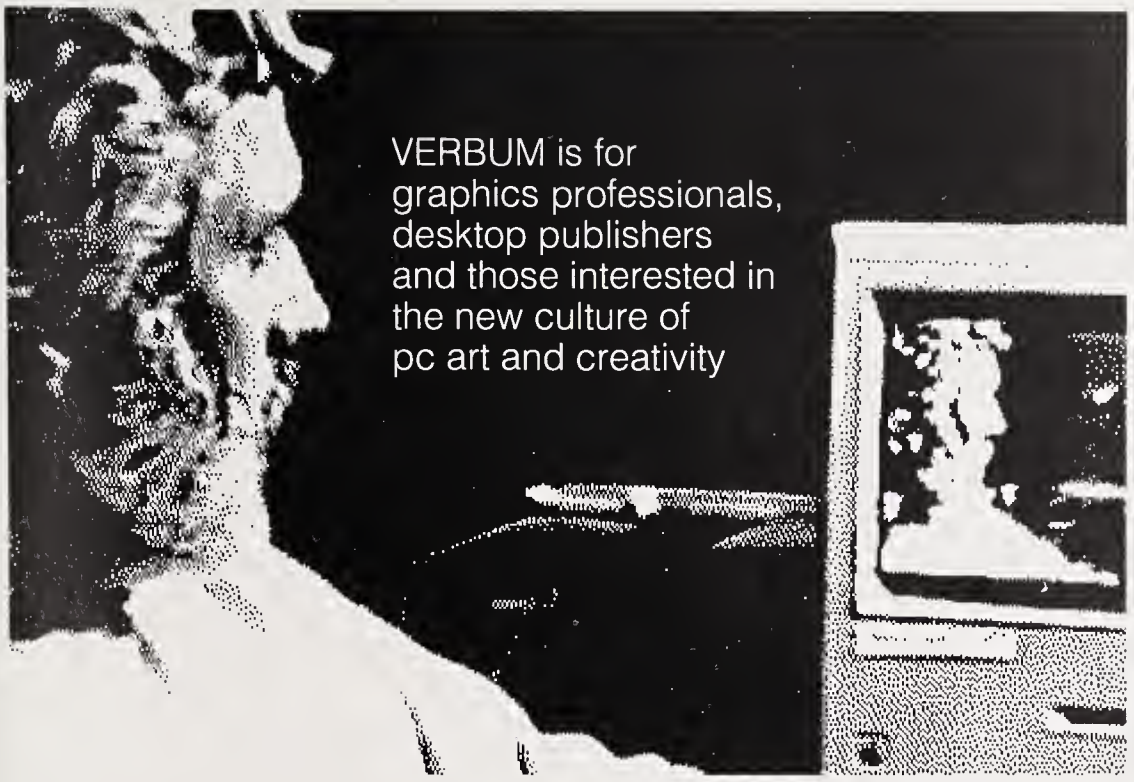

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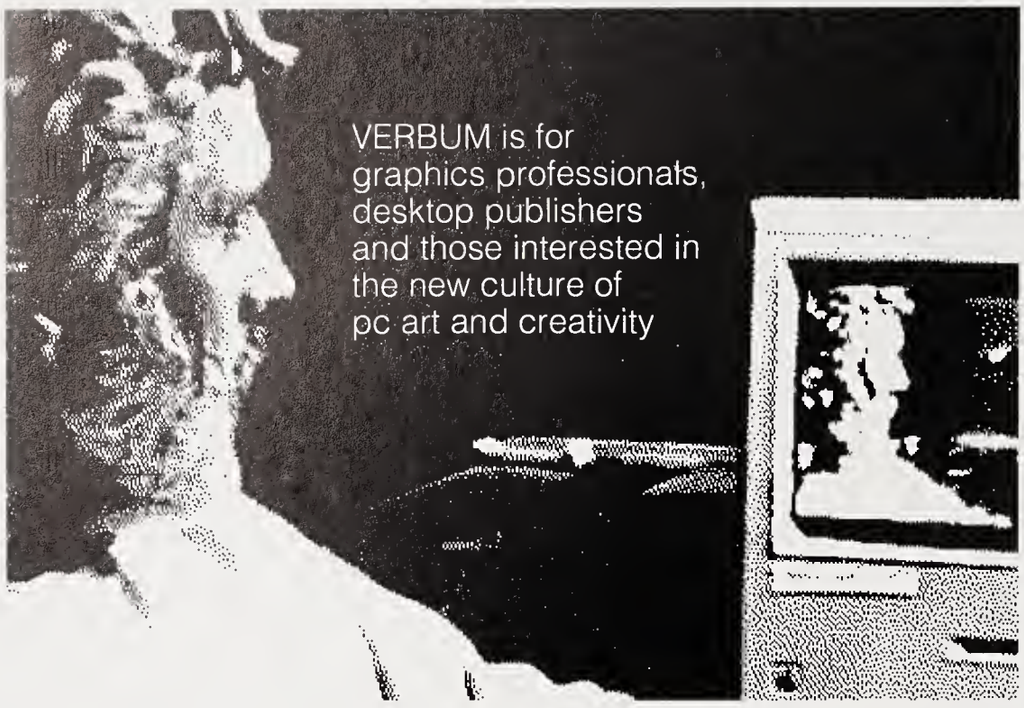

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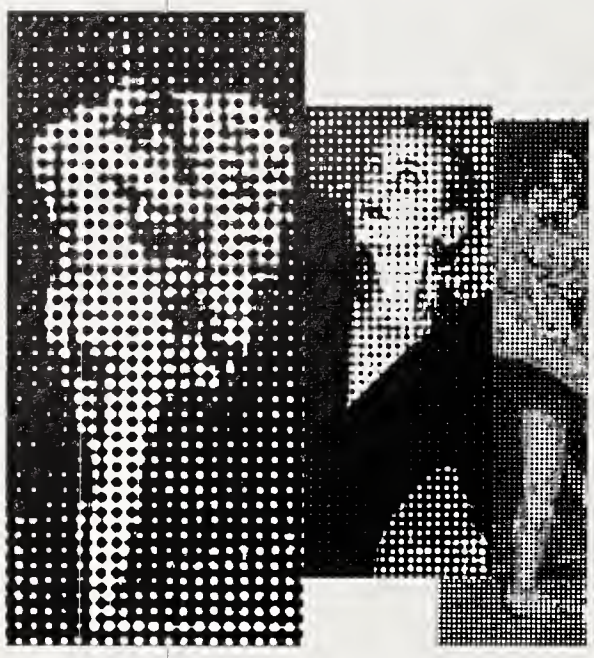

Verbum 2.2 Production Notes This issue of *Verbum* was produced with Aldus' PageMaker 3.0 on a Macintosh II. Proofs were done on the Apple LaserWriter II. Final output, on resin paper, was generated on a Linotronic L-300 at 1270 dpi. The cover and art on pages 22-23 were run as 4-color film negatives on the Lino at 2540 dpi. Central Graphics of San Diego provided the L-300 output. *Verbum* 2.2 was printed offset by Neyenesch Printers of San Diego, California on 70 lb. Flo-Cote.

Contents spread: Design assist by Mr. Perrin Vitkus; stretched photo by Rodney Jones; swimsuit photo of Lynette Berry by Tom Vollic.

Cover This issue's cover, as usual a team effort, was developed by Jack Davis working in Adobe Illustrator 88. Fashion designer Lisa King produced the model's cut-out clothes. The photograph of Tina Underwood was shot by Rodney Jones. It was scanned on a Sharp 450-JX flatbed scanner and modified in ImageStudio. (We had the model in color, retouched in PixelPaint, but decided to use a halftone of the image.) The cover was separated through Illustrator 88 on an L-300 at Central Graphics in San Diego.

Frontispiece *Venus 2* by Mike Swartzbeck. A high fashioned GraphicWorks composition using scanned photos and the program's matting capabilities to advantage.

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INTRO

Welcome to *Verbum 2.2*.

IN THIS ISSUE of the journal we begin an exploration of the relatively new area of fashion design and pcs. We've found this to be a particularly intriguing application of pc art. Clothing design is such a *human*, non-linear art form, yet pc art tools benefit the designer dramatically in the creative process. Manufacturers benefit too when the designers' "right-brained" work is translated into "left-brained" production through the CAD-CAM connection. We're looking forward to following this field as it develops, and welcome feedback on all levels: reactions to the article, press information, art submissions for a more fashionable *Verbum* Gallery.

Mel Ristau and Georganne Deen are in the spotlight with this issue, and we are pleased to continue Neal Fox's music series.

WHAT IS ART? WHO IS AN ARTIST?

One thing that we're learning in producing the art exhibits – pushing the "fine art" edge – and instructing people on the basics of these tools, is that this technology is further expanding the definition of "art" and "artist." Just as the technology of modern media has broadened the definition of "art" with Lennon/Ono's peace events, Christo's oovered sidewalks, Robert Wilson's operas and the many conceptual and collaborative art forms, the use of pcs in the art process is further expanding traditional art boundaries. In this issue's Gallery we have some interesting mixed media pieces using the computer in concert with other art forms. We also tune in to Georganne Deen's avant-garde Amiga work, including animations, for Oingo Boingo concerts and Timothy Leary's interactive pc programs. We're exploring creative hypermedia (see last issue's "Stackware Party" and the *Verbum Stack*), anticipating incredible interactive music video encounters. We're looking at work on high resolution 19" monitors and appreciating that *this* is a piece of art, and *this* is how it is experienced best: pure colors, pure light waves. And we realize that in the future increasing millions around the world will experience these photon masterpieces on their hi-def soreens...

Another result of pc art tools is the necessary broadening of the definition of "artist." Must we "first paint [with oils] like the masters, then do what we want" as Salvadore Dali tells us? Or can we scan, modify, add words, do a neon effect, Lino, silkscreen, frame and call it a real work of art? If a person draws some geometric primitives and digitizes some sounds and puts it together in an animation...is he or she an artist? Perhaps not necessarily a *good* artist, but yes, an artist. The pc has opened up a whole new realm of art-making possibilities, and for many, it represents the first medium that they have been able to use effectively for creative expression.

That reminds me, I have a four year old daughter...mind if I show you a home movie? Just a quick one; goes like this: "Daddy! Can I work on the c'mputer? I want to make a rainbow!" Granted, not many kids have access to a Mac II with five megs, PixelPaint and a SuperMac 19" Sony. But she mastered the mouse without any instruction save watching dad. And when she got bored with rainbows, she started drawing cats and figurative things. There is something *basic* about seeing that little hand point and click and dart the mouse around. She can't even read yet, but she's memorizing pull-down menu commands, buttons, etc. just by the context. We have a regular Mac in our home and she now has her own programs ready to launch and is learning so fast it's unsettling: SuperPaint, CrystalPaint (great mandalas), MacWrite (just into the letterforms as design, but does type K-A-T-Y) and, of course, visually delightful HyperCard stacks – the Manhole (Prolog Software), A Dream Called Storm (B&B Soundworks) and the Inigo stories (The Voyager Company). What will "computer art" mean to kids in Katy's generation 10 years from now?

I NEED A NEW *WORD* Speaking of "computer art", isn't this phrase getting a tad stale? It implies that the computer makes the art. *Artists make art.* The computer is a tool. Everybody knows that, right?

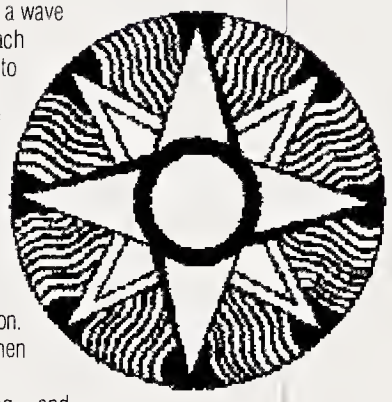
With *Verbum,* we have always made a point of stressing *"personal* computer art" as the new genre. We find "pc artists" to be graphic designers, painters, concept artists, marketing communicators, even wireheads and technicians who followed the technology into new careers. It's a huge and vastly more diverse group than the elite ranks of those in high end computer graphics. I think the term computer art will gradually come to follow our definition. But the real problem is the basic word "computer." I never have liked it. Sounds like a bean counting appliance. And to call our work "computer art" seems to indicate that it was pre- programmed or something. Does a painter call his work "brush art?" Does a technical artist call his work "Rapidograph art" or "template art"? In the original *Verbum* I was rambling on about how we should call the computer (and the vast network they will all eventually be linked to) the "exo" for *exobrain.* A bit strange I suppose, but don't we need something new? Maybe there's a sexy French or Italian word that would help...

CONTESTS! It's been great to see the promotion of pc art, especially Macintosh art, during the past year. *Verbum* staffers have been called upon to help judge some of the competitions, including the Macworld Macintosh Masters, ABA Software's Draw It Again, Sam contest, and the forthcoming PixelPaint and Canvas competitions. April Greiman won the Macworld Macintosh Masters grand prize with her Pacific Wave sculpture (see issue 1.3), and Bert Monroy and Dominique de Bardonneche-Berglund also took high honors. Michael Green won the Draw It Again, Sam contest with the kind of thought-provoking composition we would expect (see pages 4-5). Congratulations to *all* the winners in these competitions. It's said that artists are the antennae of the human race; let's see if pcs can help us pull some *really* amazing things through!

IMAGINE We're mounting an updated version of the "Imagine" show that Apple commissioned earlier this year (see last issue) at the Computer Museum in Boston for a two month exhibit beginning August 15. (Thanks to sponsors Silicon Beach Software, Letraset Graphic Design Software and SuperMac Technology.) It will be interesting to see the response, if any, from art critics. We plan to further develop this show, with work from all types of computers, next year. We already have interest from a number of quarters, but will be working on sponsorship that will allow us to take it "on the road" to galleries in the U.S., Europe and Japan.

WAVES

Verbum is moving right along, riding a wave somehow. Each issue seems to accumulate the results of the latest 3-4 month round of software upgrades and artist experimentation. Published when ripe.

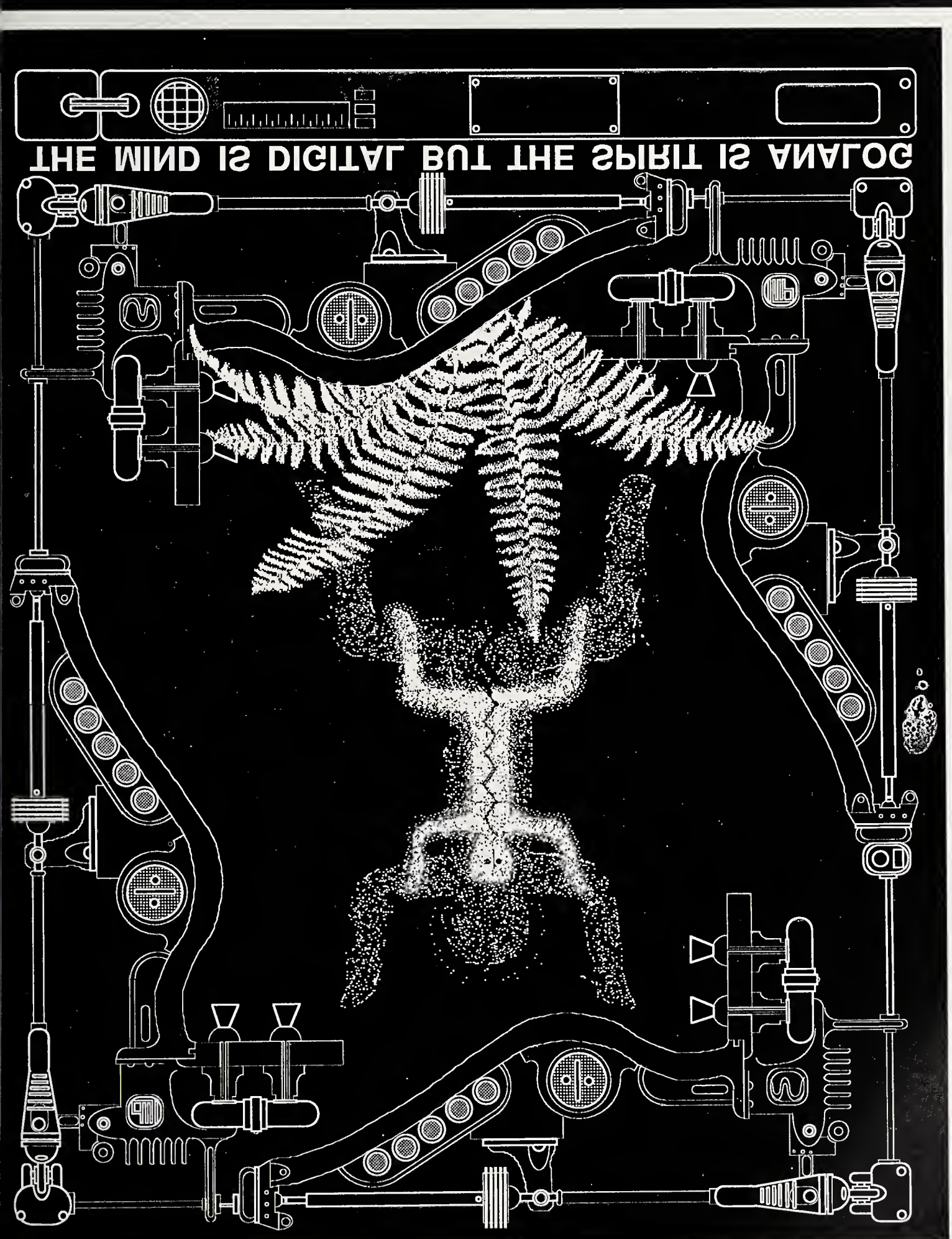


It's exciting – and exhausting – to be geared to this awesome evolution of technology. For those new to this field, a word of caution: You don't just buy the system and learn it and now you're all set. It's not a typewriter or a photocopier. It's intelligent. It's a dynamic node, one of hundreds of thousands. It resonates with a driving desire to do more things better, faster. It grows, through it's pervasive economic power, with ever-improving software, new peripherals, new chips. And if you don't keep up, if you let things sit for, say, six months, you'll find yourself off the boat, your files won't work with other computers, you'll be missing incredible new benefits and your peers will act superior.

Seriously, there are good reasons for all the excitement. It's tremendously rewarding to learn these tools and have them work for you. But it *is* an ongoing responsibility, if you're depending on the pc in your profession, to keep current. You're riding the wave of *progress!*

See you next issue.

— Michael Gosney

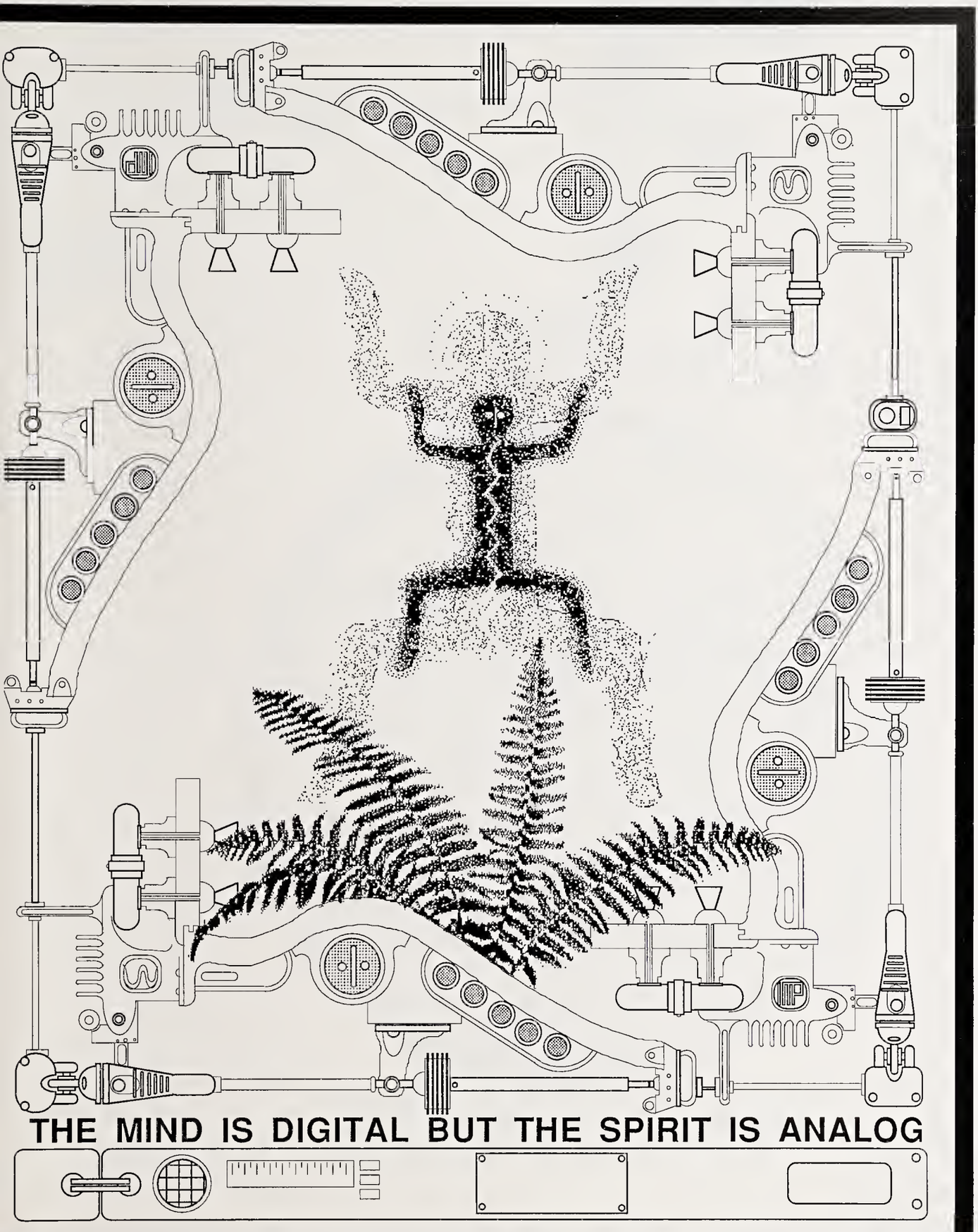


ABA Software congratulates Michael Green, Grand Prize winner of the Draw It Again, Sam contest.

The independent group of judges selected "The Mind is Digital" for its originality, concept and effective use of the program's capabilities.

Congratulations also to the other winners of the Draw It Again, Sam contest.

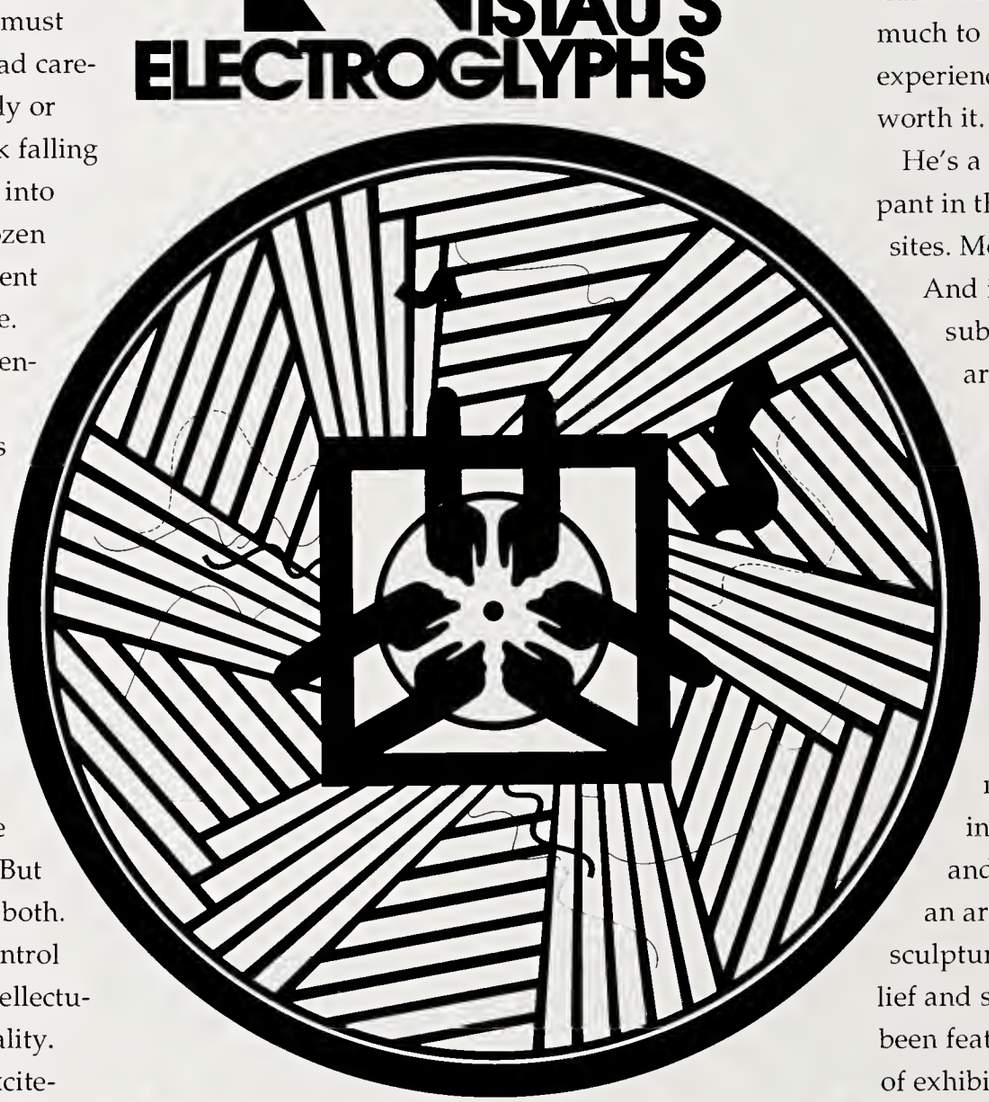
ABA SOFTWARE



Michael Green is an illustrator and writer who has produced several books, including the landmark *Zen and the Art of the Macintosh* (1986, Running Press). He is currently working on a new book project that will use the current technology in the same pioneering fashion that Zen did in 1986. He lives in a country abode outside of Philadelphia with his wife and two children.

RISTAU'S ELECTROGLYPHS

■ *by Jim Hance*



"Mimbres Seed" is a tribute to the work and lifestyle of the Mimbres potters of New Mexico.

MEL RISTAU'S ART IS IN THE BALANCE

Mel Ristau gingerly balances himself on a tightrope. He walks a fine line (one he has scratched in his Texas soil with the edge of his boot) on which he must tread carefully or risk falling off into one of at least a dozen dreaded omnipresent opposites in his life.

There's a shear tension in his work that both embraces and fears total emersion in one of the opposites. Life doesn't offer any gray areas, no comfort zones. There is the choice of one extreme versus the choice of another. But Mel Ristau choses both. Anger and joy. Control and surrender. Intellectuality and emotionality. Tranquility and excitement. This makes life a challenge to accept sometimes, like thinking he's the only sane, responsible person in a world of angry screaming, crying, laughing, sobbing, hyper-emotional people, only to recognize sometimes that's him. The consciousness of *being* those opposites is for Ristau the consciousness of being alive. Ristau is an unselfconscious folkartist in an extremely complex, technological and bewildering mechanical world. There's always the danger of falling head-first into one of the opposites. But there's also the notion of security after expertly maintaining his balance. Or the self-assurance gained after discovering that it didn't hurt that much to fall and that the experience was probably worth it.

He's a willing participant in this game of opposites. Most of the time.

And it makes for great subject matter in his art.

VISUAL COMMUNICATION WITH *ELECTROGLYPHS*

Ristau is an assistant professor at Abilene Christian University Department of Art teaching graphics design and printmaking. As an artist, his works in sculpture, assemblage relief and serigraphy have been featured in a number of exhibitions in Abilene, Dallas and Santa Fe, New Mexico. He also keeps busy as a freelance consultant in desktop publishing and graphic design, as well as a HyperCard program developer. With Craig Ragland and InterActive Design of Seattle, he's now working on what he calls "a major new HyperCard product". Despite his obvious interest in technology, Ristau cultivates an appreciation for the ancient folk arts (especially Pueblo Indian art and artifacts), as well as the simplicity and unselfcon-

scious non-seriousness he sees in Matisse's work. The works we see here are serigraph compositions of glyphs Ristau produced on his Macintosh computer. We might call them *"electroglyphs"*. He's like a writer who needed to create his own symbol language to get his story told.

Each of his artworks is literally a simple declarative statement, composed of these electroglyphs which he has created like characters of an alphabet. The glyphs are arranged in compositions like sentences, and later re-used in other compositions. His glyphs might be categorized in two types: the stressors of life (hammers, arrows, anvils, snakes, atomic briefcases) and the human response (his "stress men", the barking dogs and the puking bear "expelling things he's digested, rejecting experiences").

In "Sans Time", Ristau describes the "simultaneousness of consciousness or current anxiety" in a composition where the central focus and strong border hold in check random disorder, danger and chaos.

"On the Anvil" describes how we're shaped by life – not too gently sometimes.

"The Plow" describes a "sifting through" of life's experiences, and a person's preparation, like the soil, for greater understanding and an abundant yield.

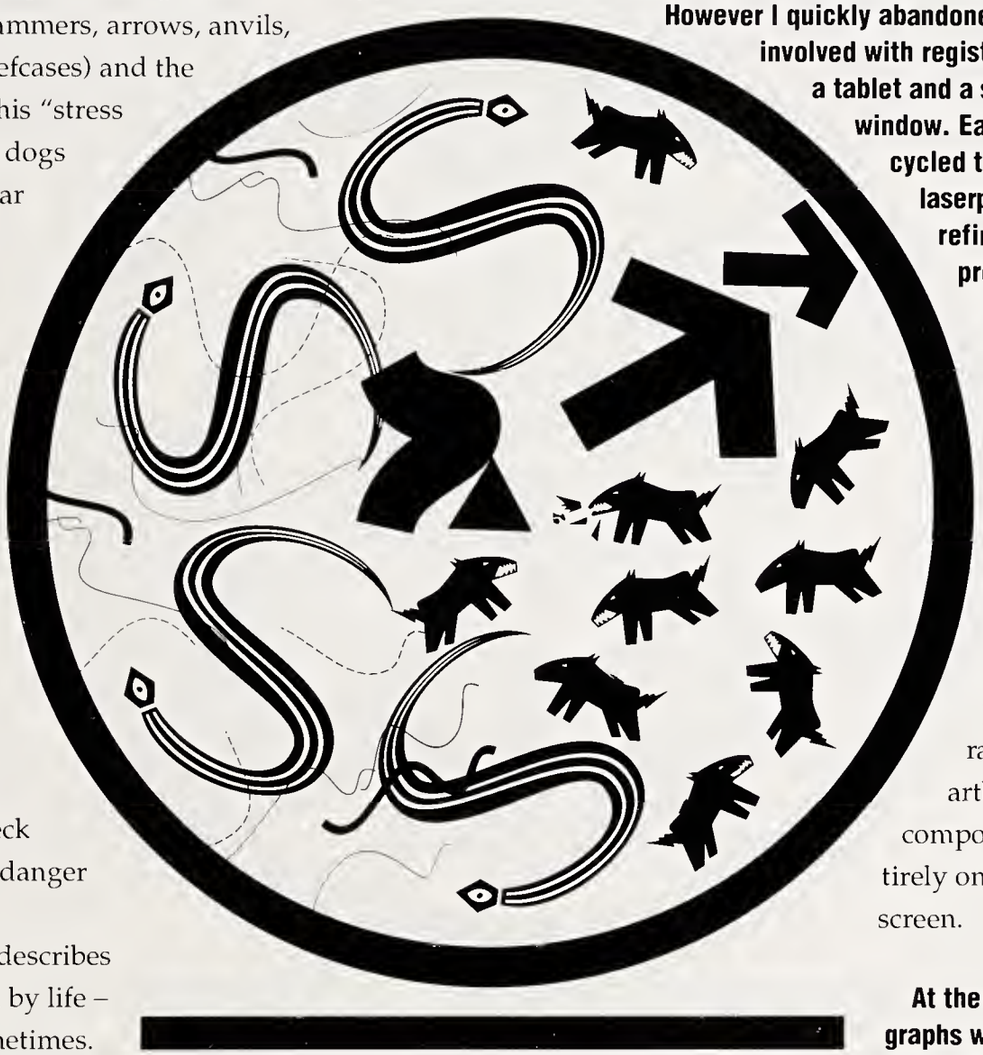
In "The Hiss and Snap of Suspicious Minds" Ristau describes his confrontations with Christian fundamentalists,

who he feels take an "anti-creative stance" toward new or different points of view.

In a loving composition, "Mimbres Seed" describes his admiration for the beauty and practicality of the work and lifestyle of the Mimbres potters of Santa Fe.

Ristau describes the production of the glyphs. Fontographer was used to create a library of independent graphic signs.

Initially I digitized drawings using a Summagraphics tablet. However I quickly abandoned the complexities involved with registering art between a tablet and a slippery, scrollable window. Each graphic sign cycled through a process of laserprinter proofing and refinement. The final proof was printed on a laserprinter as a full page sample approximately 8.5" x 11" and set aside.



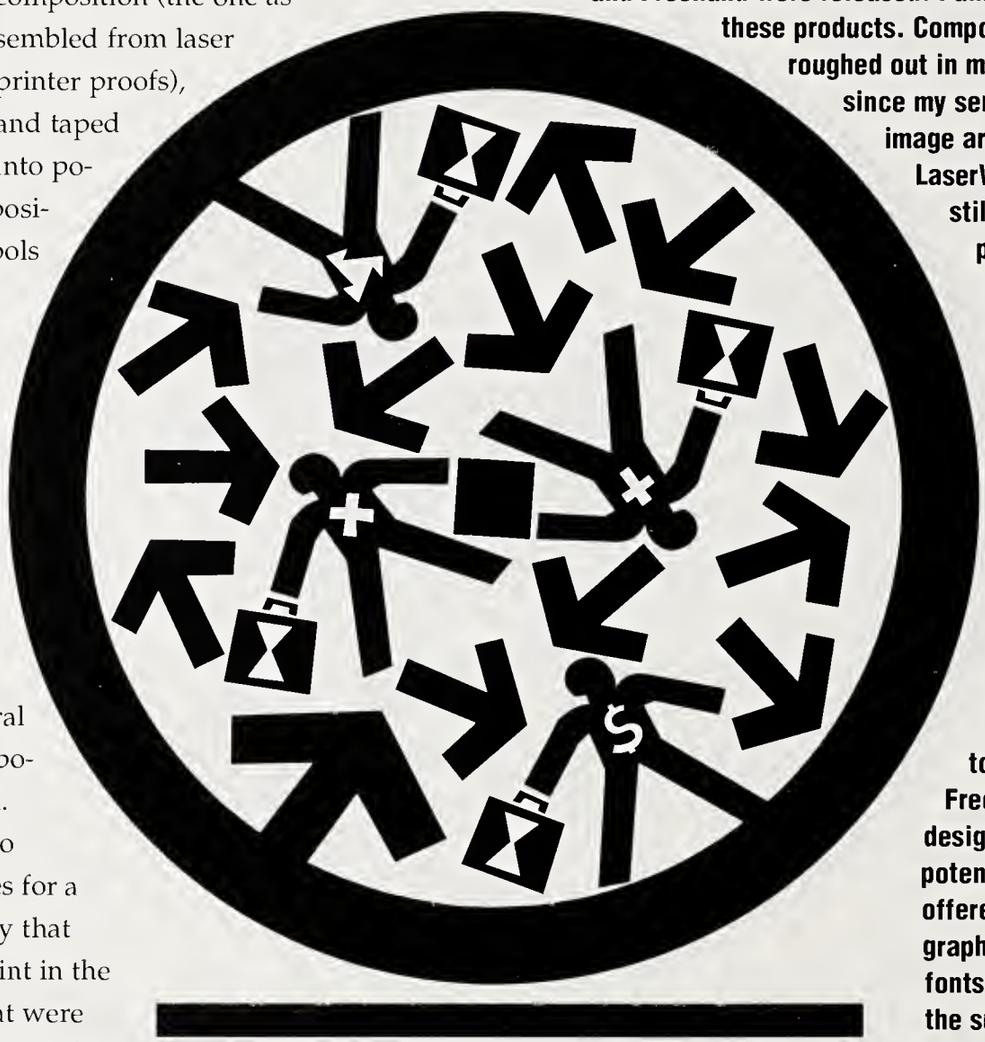
"The Hiss and Snap of Suspicious Minds" describes Ristau's confrontations with Christian fundamentalists and their resistance to new or different points of view.

Composition involved cutting the symbols out of paper printouts and arranging them on artboard rather than composing them entirely on the computer screen.

At the time these serigraphs were produced I was not convinced that available software would allow me the control I required for composition decisions. I found that composing the image was more intuitive with paper images, drawing table and two hands. To prepare for composition, the backs of the laserprinter proofs were waxed and the excess paper cut away. If I determined that a graphic needed to be a size different from what I had output from Fontographer, I would either enlarge the graphic on a process camera or reprint

using Fontographer's "Assorted Size Samples" option. When I arrived at an appropriate composition, it was photographed at half-size using conventional PMT graphic arts material. Gouache was then applied to the PMT to work out color composition.

From the PMT/gouache studies Ristau began to plan the printing of a particular composition. He reprinted all of his graphic symbols on coated paper stock to improve the density of the blacks, and made film positive PMT camera shots of each. Large sheets of mylar (24x30) were laid over the full image area of the original composition (the one assembled from laser printer proofs), and taped into position. The film positives of the symbols were then trimmed, registered with the composition below and taped into position. Each mylar overlay served as a carrier sheet by keeping several parts of the composition in position. Care was taken to choose the shapes for a particular overlay that were either to print in the same color or that were not tangent to shapes that were to print in *another* color. He was thus able to economically reduce the number of mylar overlays to as few as two for prints that involved six to ten colors. The mylar carriers were then used as the positives required for burning photosensitive screen stencils. The rest of the screen printing process proceeded in the conventional manner.



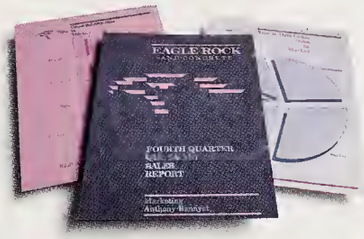
The random disorder, danger and chaos Ristau finds in life are held in check by the strong border in "Sans Time."

The theme of the dynamics of opposites seems to be carried through in Ristau's approach to art production as he blends technological approach of creating the graphic symbol on the computer screen with the "primitive" approach of assembling the symbols into a composition by hand.

I became quite comfortable with Fontographer. "Mousing" a motif became a more efficient means of notation than pencil and paper. Fontographer's toolbox is very supportive and intuitive. This body of work was completed well before Adobe Illustrator and Freehand were released. I am now using both of these products. Composition can now be roughed out in miniature. However, since my serigraphs involve an image area larger than a LaserWriter can handle I still employ the print production process described above. Although I am now creating graphic signs with either Illustrator or Freehand, I wish Altsys would add an option to Fontographer that would allow the user to save an individual character in EPSF format. Prior to Illustrator and Freehand, many graphic designers saw the great potential Fontographer offered for designing any graphic object, not just fonts. Altsys should return the support by providing us with a way to retrieve those early Postscript objects, especially between Fontographer and Freehand!

Study Ristau's compositions here and feel yourself balance on the tightrope. I think you'll agree the work describes some of life's experiences in bold, exciting and memorable ways.

Now you can get color with your laser printer. In seconds.



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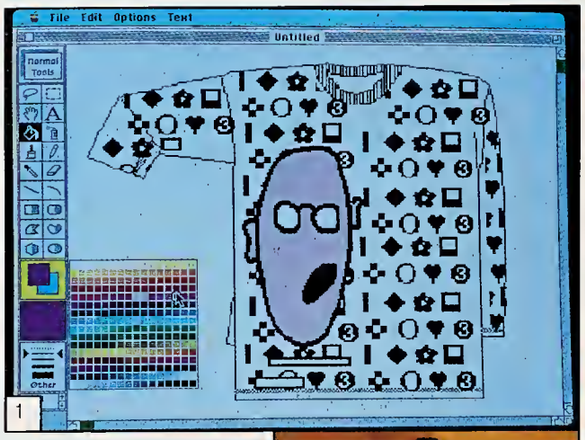

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2

■ *by Jim Hance and Willard Van De Bogart*

What has been described as the "fourth wave" of technology in other industries is emerging in the fashion industry as well. More and more, the design, then the production, and finally the manufacturing of garments are being done on computers. Machines designed to automate specific tasks of the design and manufacturing are being replaced by machines which automate more of the process. The "third wave" equipment have done a very good job of automating costing, printing, cutting, sewing, etc. The fourth wave of technology is integrating the work of the designer with the manufacturing, cutting costs and design time by integrating design with cost evaluation, and replacing expensive, non-expandable proprietary computer equipment with off-the-shelf powered-up PCs running sophisticated software packages. Though designers are now using computers to accomplish much of their work, the "fourth wave" has not quite hit the fashion industry yet. Software manufacturers are just coming out with the products which will integrate design processes fully with the manufacturing process.

Computer systems known categorically by acronyms such as CAD/CAM (computer aided design and manufacturing) and CIM (computer integrated manufacturing) have been around awhile in other industries, and now are appearing in


3

1. A rough sketch of a sweater using PixelPaint on the Macintosh II was the first step in the creation of a new apparel piece for the Itoken Minna line.
2. Designer Jackie Shapiro holds the finished piece.

PHOTOS: WILLARD VAN DE BOGART

3. A digitized image of model Mimi Van Horn, given a pixelation effect by Mike Day on a Lightspeed design system.

COURTESY TECHTRON STUDIOS


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garment design rooms around the world. Interestingly, the fashion industry is perhaps the first to begin to use computers to aid in the manufacturing of a product which "makes a personal statement," embraces the "natural" shapes of the human body and appeals to the senses as clothes do. The integration of a machine into the creative process of clothing design is intriguing, to be sure. The designer still must bring to the process his artistic abilities, his experience, his aesthetic sensitivity, and creative experimentation. The computer provides a new medium where the designer can visualize the product in 3-D on the screen as he works, and print sample sketches or fabric designs in color, and manufacture a prototype in minutes. The speed of this process will "revolutionize" the fashion industry as designers and clothing manufacturers begin to embrace this new technology.

A number of companies has come forward with software packages and turnkey fashion CAD systems: Computer Design, Inc .(Grand Rapids, MI), Gerber Garment Technologies (Tolland, CT), Investronica (Spain), Lectra Systems (France), Microdynamics (Dallas, TX), and Moda Cad Inc. (Los Angeles, CA). All these systems are designed to create fashion design as well as fabric and textile design.

There are other systems dedicated to knitting and weaving designs such as AVL Looms (Chico, CA), Eikonix (Bedford, MA), Emmerich Ltd. (England), High-Tex-Systems (Germany), Pragma Ltd. (Scotland), Preview Systems Limited (Hong Kong), and Shima Seiki (Japan).

The fashion designer using a computer aided design (CAD) software package is the front-end of a larger computer integrated manufacturing (CIM) system. The computer systems discussed in this article will aid him in dealing with a variety of issues relating to design including developing new styling, designing the appropriate garment construction, style variations, fit, silhouettes, and line development. The ability to copy and repeat drawn styles on the computer allow the designer to quickly create an entire line of garments with style variations or different fabric patterns.

Obviously, the computer is going to be playing an even greater part in fashion design and clothing manufacturing in the very near future.

COMPUTER AS COMMUNICATOR

Jim Charles is a designer responsible for introducing the Macintosh to Esprit's design room in San Francisco. Though there was no computer integrated manufacturing software products for fashion design on the market at the time, Charles saw the usefulness of graphics programs such as Adobe Illustrator and AVL Looms Design & Weave software. His coworkers in the design room and his bosses were harder to convince.

At Esprit all of the creative teams of every department work in one big room. Everything happens there from developing textiles, to designing garments, shoes and accessories, to architecture, graphics, typesetting, advertising, and public relations.

Jim managed to upset nearly everyone when he unilaterally went out and ordered three Macs and charged them to the Systems Department. There were some people who feared their jobs were being taken away from them by the computer. Some didn't believe it was useful, and a few others thought it was great as long as they didn't have learn to use it. A couple years ago, illustrator John Hersey was commissioned by graphic designer Michael Mabry to do some MacPaint-type sports illustrations for sports shirt pattern designs. "They were charming and sold well, but they 'burned' the idea of using computers in design for a


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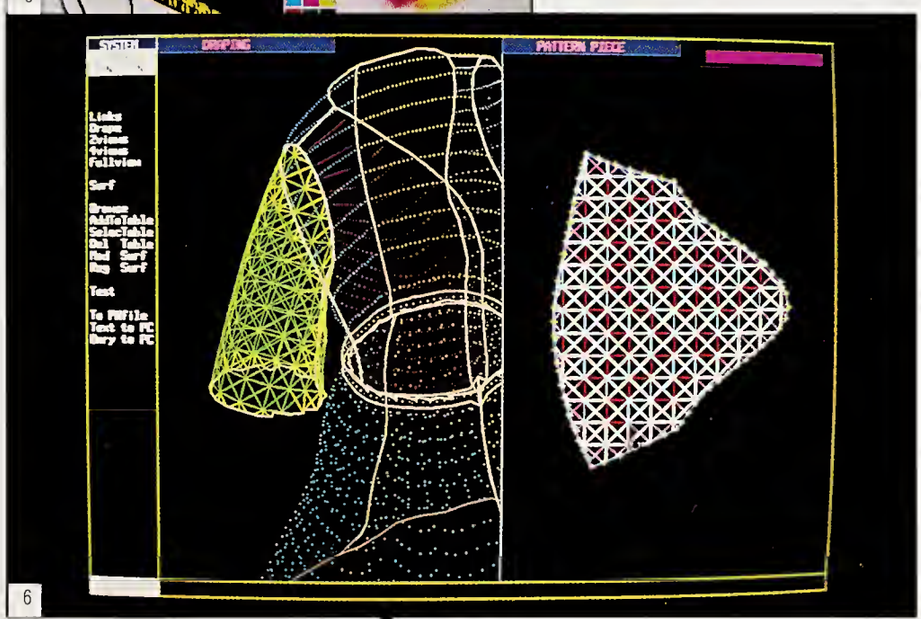

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4. The Gerber Creative Designer system allows the designer to simulate extensive color and dimensional effects when sketching work on the computer screen.
5. The MicroDesign system from Microdynamics has addressed the problem of inconsistency of color between the monitor and the printer, with a print feature which allows the designer to print a "swatch book" of color samples from his printer to compare to the screen when making color selections.
COURTESY MICROOYNAMICS
6. The Computer Design, Inc. system introduced 3-D on-screen viewing for enhanced visualization in the clothing design process as well as eventual direct interface with manufacturing equipment.
COURTESY CDI

long time. My boss thought that was all you could get off a computer, and couldn't be told you could do anything else with it." The owners had no interest in the Macintosh, and had no idea of what Charles was doing with it. Esprit was prominent in the trades recently with news of the break-up of the owners and reports of sluggish sales. During this time a national publication printed an article on Esprit's progressive thinking in computerizing the design room. Someone asked one owner about the article and the staff designer who was interviewed, Jim Charles. That was the first time his boss even inquired about computerized design. Since then Charles has gained a little more support for his computer design.

Computers have not taken over even the entire design process at Esprit. One designer may print out a pattern from the computer, and another may color it in by hand. At least ten people have done parts of a job on the design portion alone before it is finished and few of them are well versed in the operation of the computer. Charles says the computer can help the designer be economical and fast by freeing him up from repetitious drawing. "A halfdrop repeat may take three days to create, and another three days to re-do. I can do three or four in a half hour on the computer." Analyzing marketing data is another important use of the computer not to be overlooked. "If we've had success with a certain color green, we may choose to use it again."

Charles has been very impressed with Adobe Illustrator for the Mac. "Adobe is very honest, their language is brilliant. They understood all we wanted was simplicity and fine quality output." The Macintosh is superior for creating camera ready art. But he's looking forward to using Macs and IBMs interactively as exciting new CAD/CAM programs for the IBM like the 3-D CAD program from CDI are introduced. Haberdash for the IBM is one of the most impressive programs to come out for textile design. He'd also like to get the Iris ink jet printer in the shop which will print on any kind of material, "even sand paper with photographic quality."

But asked what he wants to see next on the computer, Charles stated oddly that we need to "eliminate the computer basically...I want the computer to allow me to express myself closer to the speed that I think. The computer does wonderful things, but it gets in the way. I need it to work in real-time. I want a computer so good ultimately it's not a computer. It should be a commmunication device you can draw with, talk with, bridge our minds together, see, feel...to express a small part of what I am ultimately."


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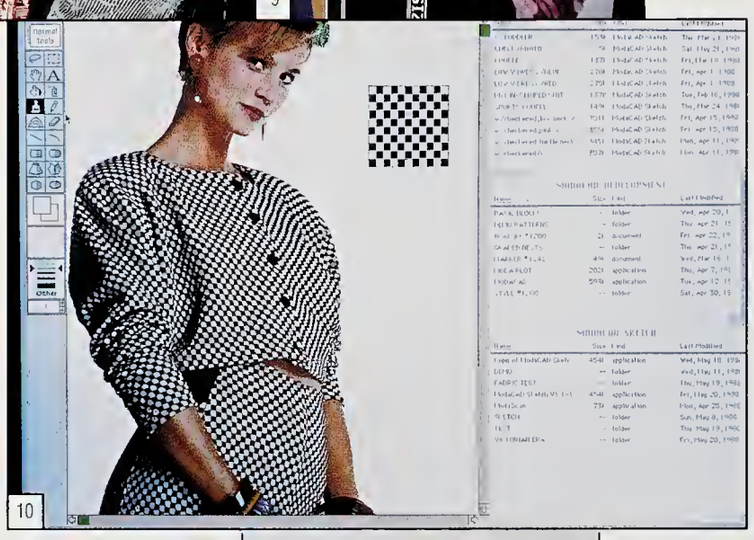

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COMPUTER DESIGN FOR COST REDUCTION

The creative potential can be readily appreciated by designers, but the reason clothing manufacturers will embrace the new technology will be profitability and, for many, company survival. Computer Design Inc.'s president Roe VanFossen suggests that American manufacturers, particularly in the fashion indus-

7. Jackie Care, senior designer for the Levi Strauss Shirt Division, can scan pattern swatches and add color on-screen for visualizing new garment designs in detail.
COURTESY LEVI STRAUSS

8. The color in the pattern of this shirt can be modified easily in any number of variations.
COURTESY LEVI STRAUSS

9. Designers can visualize a realistic depiction of their work on-screen and select colors from an enormous pallet with the CDI system.
COURTESY CDI

10. A scanned photo of a model allows the designer to experiment with different looks using the ModaCad system. Pattern designs and colors can be easily changed and modified.
COURTESY MODACAD

11. A library of period fashions, included with the ModaCad system, can be referenced on the computer screen and clothing style details can be quickly copied. ModaCad uses a modified version of PixelPaint on the Mac II.
COURTESY MODACAD

try, are losing a battle to stay alive against foreign clothing manufacturers. "Since 1980, 3,000 apparel/textile companies have closed their doors and 350,000 jobs have been lost. Of the $170 billion trade deficit, $20 billion is in the apparel industry.... In 1974, 80% of the shoes sold in this country were made in this country. Now more than 80% of the shoes are imports and footwear manufacturing in this country is practically dead." VanFossen was vice president of Corporate Information Services at Wolverine Worldwide, makers of Hush Puppies shoes, when he analyzed the company's declining competitiveness in marketplace would only be turned around with a fully automated factory. The design of the footwear in 3-D appeared to be the answer. "If I could design a shoe in 3-D, then I would have the data I needed to drive an automated factory," he concluded. "Everything you needed to know about price of material, what you had to do with it, how you had to stitch it together — I'd have all this information. That was what I was after."

In 1983 VanFossen started Computer Design Inc. in Grand Rapids, MI which was partially financed at that time by Wolverine. CDI installed their first system about five years ago at H.H. Cutler Co. of Grand Rapids, a childrens' wear company. Since then they have installed more than 50 systems in the U.S. and Europe. The CDI system is IBM PC-based, and the software starts at about $25,000. The designer can visualizes garment in 3-D on the screen and the program will automatically create 2-D flat pattern pieces. According to Jerry Johnson, vice president of Marketing at CDI, "On our CAD systems today designers can design fabrics, then wrap those fabrics onto a model to actually see how it would look. Change colors and try it again in minutes, not hours or days as it now takes to repaint or recolor fabric designs. Change necklines, sleeves, add pockets, take pockets away...all of these functions can be performed on our computer. These functions can greatly reduce product development time."

INTUITION AND INFORMATION IN FASHION DESIGN

Jackie Shapiro became one of the first fashion designers in the United States to explore the application of the computer with fashion design when she picked up her first Macintosh in 1984. She first used the computer to help develop her own line called "GARB", or Global Apparel Resource Bank, and even then she claimed that the computer was a vital part of her design process. "GARB has taken available technology and applied it...for designing clothing. To experiment and explore an infinite number of design solutions. To visualize...garments before making them. To coordinate one silhouette with another. To create, store and retrieve frequently used images: bodies, basics, prints, parts, stuff (garment treatments). To scale for measurements for pattern specification detail. To design labels, logos, illustrate...and to write this."

But using a computer alone does not make one a great de-

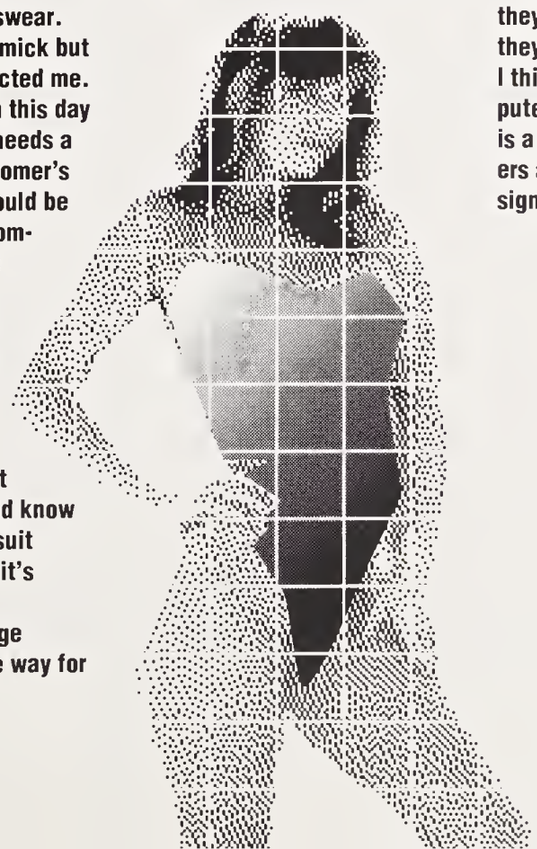
CUSTOMERS LIKE TO DESIGN IT THEMSELVES

One Southern California store blends fashion design with a novel marketing approach. The store's name is Softwear Swimwear and they sell custom swimsuits "designed" on a computer.

Liz Norling and Gary Leeds opened a swimwear boutique which featured an unusual gimmick of allowing customers create their own sportswear. "Not necessarily a gimmick but a new twist." Liz corrected me. "In order to succeed in this day and age in retail, one needs a unique idea." The customer's image in a swimsuit would be scanned into a color computer program, and the customer could then select from 300 fabric patterns which can be projected on the scanned image of the sportswear on the computer monitor. That way the customer would know exactly what the swimsuit would look like before it's made.

Fashion trends change quickly, and this is one way for the customer to keep up with the fashion...or start his or her own trend.

"There are problems created by using the computer," acknowledged Norling. "We are working on a solution to the two dimensional look of the person on the screen. There is also a problem of confusing the customer with so many possibilities of color and fabric that it's hard for them to make a decision on which suit they want. We also tend to get into trouble by taking colors from the screen...and then finding out that we do not have the color in stock."



The customer can see three suits on the screen at one time to compare and evaluate which one looks best. The customer's image can also be saved in the computer and pulled up at a later time for design another suit. "This is a good feature" Norling says, "as the store's sales volume can be larger. If they like all three swimsuits they may buy all three! Overall, I think the addition of the computer system to our retail store is a great one as many customers are highly excited about designing their own clothing."

signer. Intuition and information are important keys to success in fashion design, she says. You must understand what the consumer will want a year from when you conceive it. "Information means going to stores to see what your competitors are doing as often as possible, knowing what fashion and color forecast services predict for the following season, reading the trades all the time. It means using or creating tools that serve you to make your job effective."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Today Shapiro is designing the Itokin Minna line for this very upscale Japanese department store chain with their flagship store on Madison Avenue. She uses PixelPaint and Aldus Freehand for her fashion designs. The storage capabilities of the computer allow her to call up any previously designed item, combine it with other designs to come up with totally new look. With her Macintosh II Shapiro explores new design techniques by creating polygons and filling them in with fabric designs and color to see if it would look good on a silhouette of one her latest designs.

She concedes that the computer has affected her design. "The Mac has made me think differently. There are many computer routines which I recall even when I work manually. (I now) approach design on paper sometimes as though it were off a monitor."

Shapiro in a recent interview said, "I want very much to be involved with people and companies that are designing software for the designer. Many software packages do not take into consideration the designer's needs and to my mind the user interface is the most important aspect to computer designed fashion."

TWO MANUFACTURERS ADDRESS THE COLOR PROBLEM

Microdynamics became a pioneer in fashion design software with the introduction of its CAD system, ADS 50 Design Center, in 1984. The design system included tools to move, scale, rotate and cut, allowing the designer to create pattern designs quickly. In 1986 the system was upgraded into the ADS 55 Design Center which supported the AT&T Targa Board allowing for the input of color images. Microdynamics has been in the forefront for manipulating full color images. By 1987 the ADS 55 Design Center was renamed the MicroDesign I System and included a high resolution color digital scanner enabling designers to input sharp, clear color images. Microdynamics recently unveiled its latest system, MicroDesign II, featuring a higher color screen resolution of 1024 x 768 pixels and a 32-bit graphics.

One of the biggest problems designers have faced with using computers in design is the inconsistency between colors displayed on the monitor and the colors produced by the printing device. An optional program with the MicroDesign II allows the designer to print out a color swatch book to test the color output of the printer he is using. He can then select the results from the swatch book that he wants and assign the appropriate values to the image on the screen.

A number of famous designer lines are using the MicroDesign system already, including Liz Claiborne, Danskin, Cheryl Tiegs, Carter Howley-Hale, and Head Sportswear.

Gerber Garment Technology, Inc. is another contender in the PC-based fashion design systems manufacturers. Gerber is well known in the industry for its computerized cutting machines. In 1985 Gerber came out with a fashion illustration system, and then introduced its Gerber Creative Designer system in September, 1987. In step with the fast pace of the computer industry, Gerber has just introduced the expanded capabilities of its new Gerber Creative Designer system at the Cologne show (priced at $60,000) , a system which includes a Wyse 386 computer, cartridge hard drive, both a high resolution color monitor and a monochrome monitor, tablet and stylus and software. The system excels in offering expansive color effects including mixing, spreading, and modifying hue, luminance and saturation. Standard tools allow for drawing, brushing, measurement and adding texture, and the "warp" tool allows the fabric designs to be given the natural shapes on screen that the clothing would take. The system offers these advanced features for two-dimensional color design visualization yet is very easy for the designer to learn to use.

ENTERING THE FOURTH WAVE

ModaCAD has just introduced a Macintosh II-based system which has been enthusiastically received by both small apparel manufacturers and designers alike. ModaCad is the first


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12. The computer screen depicts a design in progress by Jackie Care for the Levi Strauss company.
COURTESY LEVI STRAUSS
13. Designer Claudia Galonska created these styles using the French computer design system, Lectra.
PHOTO: WILLARD VAN DE BOGART

software to support all phases of design, from sketching and image processing to pattern generation, sizing, grading, marking and automated manufacturing. It is also the first apparel package designed to run on the Macintosh II.

"The most promising feature of the ModaCAD system," observes Lucy Harley, president of Lucey Harley Associates Inc., a New York design studio and consulting firm, "is that it has the potential of letting designers operate knitting, weaving, embroidering, pattern marker making, and cutting machines, all of which are now computerized. Right now, each company has a dedicated system that can only drive its machine. This will let designers translate the art into code directly."

The system costs $30,000 and includes the Mac II computer, some peripherals and sophisticated menu-driven sketching and image processing software. The ModaCAD system incorporates modified versions of PixelPaint™ and Pegasus™ paint programs and Fourth Dimension™ database software. The key new features with this system appear to be its low price and, for the first time, the ability to interface directly with manufacturing.

Britt Nelson is a designer who has been creating a line of Canadian swimwear from design through manufacturing using the ModaCAD system. She's used the system only a short time but she could hardly contain her enthusiasm. "I had a lot of resistance to doing design on a computer. I felt intimidated because I thought it would be difficult. I thought it would inhibit my design, but it actually enhanced it. Now I have more time to check out the fashions on the street because it's so fast and efficient. It gives me extra time to try outrageous things!"

A new feature soon to be offered with the ModaCad system will be an entire design reference library of period fashions through the centuries by decade stored on CD ROM. Approximately 400,000 library images will fit on a single compact disk. The ModaCad software provides for multiple windows to be open at one time so that the designer can compare fashion examples from the library CD on screen while he works on a new design.

FASHION THE SLAVE OF THE COMPUTER?

The availability of technology through each of these products is expanding designers' capabilities almost immediately. The time required to learn these systems depends upon the individual's ability to grasp a new tool and feel comfortable and inventive with it. Some designers take months to feel comfortable with designing on a machine, and others master it almost immediately. Ease of use goes hand-in-hand with the advanced capabilities offered by these computer systems. Silhouettes can be easy enough to draw on the computer screen, but they're even easier to call up from a data base on systems which provide a "library" of thousands of designs "on-line". The availability of up to 16.7 million colors to choose certainly expands on whatever the designer could render on paper. To varying degrees, computer systems reduce or eliminate the tedious tasks of the clothing designer while lending him tremendous creative power.

Perhaps the keenest observation on the general acceptance of computers in the design community was made by Lisa King, a student at the Fashion Institute of Design and Merchandising in Los Angeles. "I am aware that many people are opposed to using computers for artistic endeavors, perhaps because of the division of art and technology in the past. But computers do not essentially stunt creativity, just as they do not create it. I find that the computer's capabilities are liberating and the fact that ideas can be modified or updated by computer so much faster than by hand is a benefit that can not be long overlooked. The computer is just a tool – a compact design studio with brushes, inks, paint, an eraser, and the end product is a reflection of whoever uses it. Yet the creative designer is sensitive and not hasty to change their tried techniques."

For students training for careers in fashion design, their future is plainly spelled out for them in the acronym CAD/CAM. A few design schools are now offering extensive computer graphics training in their curriculums, including Colorado State University, Fashion Institute of Technology (New York City), School of Visual Arts (New York City), Philadelphia College of Textiles and Science, Suite 3D (San Francisco), Computer Arts Institute (San Francisco), Cornell University, and Polimoda Villa Strozzi Firenze (Italy). These are still the pioneering institutions, but many more will follow, and the technology will continue to change the fashion design industry.

Computer Design, Inc.
5270 Northland Drive, Suite A
Grand Rapids, MI 49505
(616) 361-1139

Gerber Garment Technology, Inc.
24 Industrial Park Rd. West
P.O. Box 769
Tolland, CT. 06084-0769

Microdynamics, Inc.
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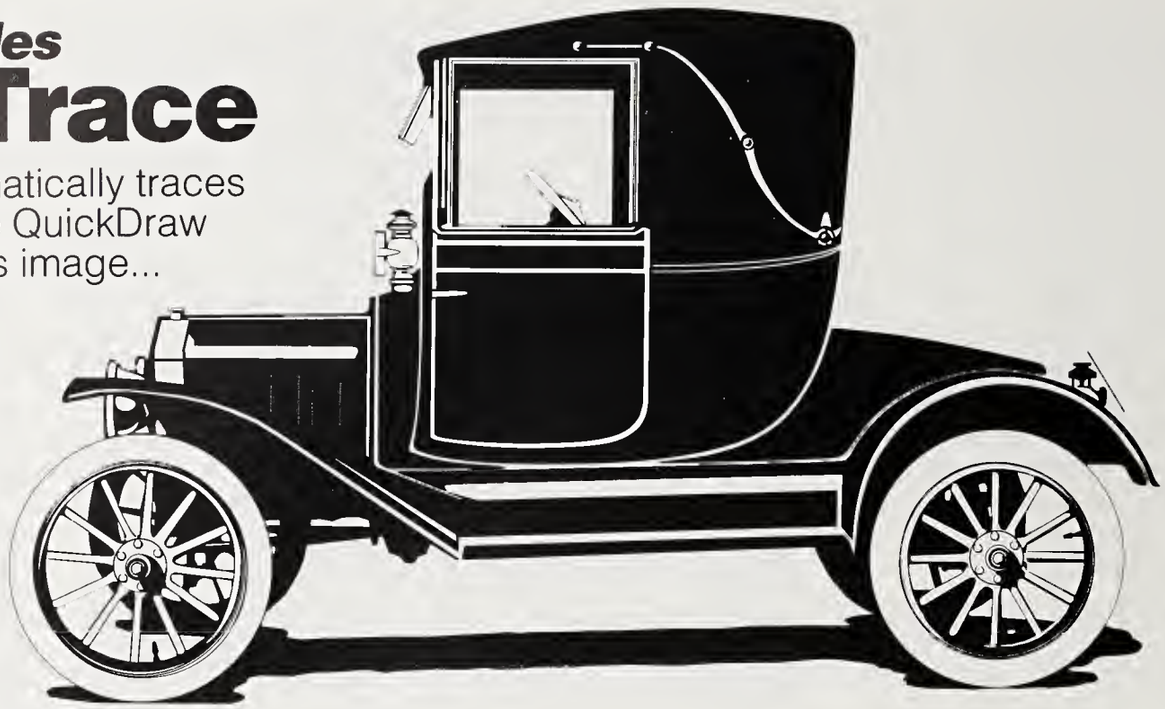

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STILL WAITING TO BE MAKING BIG BUCKS IN IMAGESETTING

■ *by Steve Hannaford*

Like it or not, the Linotype imagesetting machines—the L-100 and the L-300—have become the default high-end graphic devices fo the Macintosh and the PC. But these "artists tools" are not in the same league as most; while many computer artists and designers might be prosperous enough to have a LaserWriter or a Mac II in house, there are very few who have direct and continual access to a Linotronicimagesetter. Recently announced products, however, are likely to break Linotype's monopoly and radically change the price, availability, and ultimately the role of imagesetters in the microcomputer world.

If you have been dealing with PostScript or desktop publishing for a while, you have heard horror stories about the Lino machines. Not from the press, which has remained curiously silent about the whole matter, but from people who had submitted jobs to Lino service bureaus or from people who bought Lino machines and set up service bureaus. For several years, the PostScript/Lino connection was frustrating, often infuriating, by all the accounts I have heard. For some reason, the complications were swept under the rug. Most of the nightmares, however, seem to be over.

The Bottom Lino

The Linotype machine was not developed originally as a PostScript machine. It was intended, and still is widely used, as a typesetting machine. Some service bureaus have one or two Lino machines dedicated to typesetting and one dedicated to PostScript output.

When PostScript was added to the Linotronic machine, it was both a big step forward and a large mess. The Lino did a fine job with relatively simple documents that resembled typeset pages. But with complex PostScript, bitmaps, or programs that produced results that were at all odd or busy, the Lino machines would choke. The tendency was for the processing to go on for hours, whirring away. People told tales of letting their Linos run overnight in the hope of getting a result in the morning, only to find the machine still chugging along on the same document at dawn. Programs that actually created their own PostScript, starting with the Macintosh programs JustText and Cricket Draw, were even worse. Because of some bug (rumored to be in the AppleTalk driver on the Lino Machine), messages would get garbled whenever the processor on the Lino machine got overloaded. The results were cryptic PostScript error messages that made no sense until you realized that the memory handling incoming messages had been totally trashed. What this meant was that any attempt to take serious advantage of the best that PostScript could offer (graduated gray scales, for example) would fail again and again. People got very shy of attempting to process complex graphic images, and used fewer and simpler graphic elements. Perhaps this led to cleaner design in some cases, but it is like going on a crash diet when lost in the desert — you don't have much choice.

In addition, the LaserWriter and Lino machines often had different updates of PostScript revision levels. Often things that would work fine on the LaserWriter represented unfixed bugs on the Lino. And since individual Lino machines were updated in a haphazard way, there was not even consistency among service bureaus.

Part of the trouble was that all of the problems of a new and emerging technology hit at once. It was often difficult to know whether to assign the blame to the application writer, to Apple (the driver writer), to Adobe (the PostScript originators and board manufacturer), or to Linotype. This was exacerbated by Linotype's past habit of blaming everybody else and Apple's unwillingness to take responsibility for a situation that, whoever the culprit, was hurting them.

Selling the machines into the Mac world was only a minor part of Linotype's business. And they didn't initially have the inclination nor the expertise to deal with problems arising from this new kind of output. The experience of Minton Brooks of Design North (Racine, WI) is typical. "We've had an L-300 running PostScript since January '86. Things were rough early on because the competence of service and support people from Linotype was low. We always felt we were just about even with them in terms of expertise."

Kay Downs, manager of the service bureau at Waldman Graphics (Pennsauken, NJ) struggled through the earlier years as well. "The big problem was when we got involved in Lino printing. In reality, nothing worked right. It took a lot of effort, from the time we started to work on it until the time we had it running smoothly. We lost money hand-over-fist for the first year. We basically said 'This is R & D', but it's hard for a company to say that when you're losing big money."

Getting RIPped

Linotype eventually did improve its system with the new Raster Image Processor (RIP), created and installed over the last year. The RIP is basically a translator. It takes a series of commands in the PostScript language (which

creates vectors, or paths for graphics) and translates them into a pattern of dots, a process known as rasterizing. The speed with which the RIP can do its work is dependent on a number of factors: 1) the size of the images (bigger pages take longer); 2) the resolution of the image (1270 dpi or 2540 dpi—the more dots, the longer it takes; 3) the complexity of the images (straight lines are easy to rasterize, variable gray screens are very difficult, halftones dots are difficult, too); 4) the amount of memory available (how much can be done in one chunk); and 5) the easy availability of PostScript fonts (constant font changes and the use of downloaded fonts complicate matters greatly).

RIP 2, which provides greater processing speed, more memory, and more storage (through an associated hard disk) solves most of these problems. Larger images, higher resolution, and more complex images still take longer, but the speed of everything is greatly improved and these problems have been minimized. The great memory allows for more processing and less juggling. And greater disk space allows for having a full set of Adobe fonts available, for example, saving the time consumed by font downloads.

In addition, Adobe seems to have fixed one of the most annoying bugs (never admitted as such) in recent versions of PostScript. Bitmap processing has been speeded up enormously in the recent releases of PostScript, so bitmaps can be processed with considerably fewer problems. The improvement in PostScript also helps immensely with black and white TIFF Files.

With all these great improvements, jobs on the Lino are much more likely to run within a reasonable time (under 20 minutes) and most normal jobs run under 10 minutes. Even if the system does hang while processing, it is likely to be obvious after 30 minutes or so, as by that time either the page will print or it won't. This is not to say that there aren't constant problems and difficulties, but that they have been reduced or are more often understandable, not totally bizarre. Lino operation still takes expert skills, but not necessarily superhuman abilities, thanks to RIP 2. According to Brooks of Design North, "Timeout problems are basically gone with the new RIP. However, pages with lots of fonts and lots of tabular material and lots of grayscale somewhat mysteriously don't print. We tend to pull the graphics out and strip them in later." Curiously, Brooks reports that scanned-in halftones are not a problem with printing time , "but we're not running 256-gray level halftones yet."

Linotype's Service Has Improved

Give credit to the people at Linotype. All of the L-100 and L-300 owners and operators that I have talked to have said that the new RIP has revolutionized their work. They now proceed at a fairly businesslike clip. There is a constant supply of problems, but they appear to be as indicative of the creative nature of the work as the "buggy" side of a new computer system. The problems that do come up are generally solvable or even predictable. Field support and technical support from Linotype are improving also. In spite of complaints about the kind of service he got in the early days, Brooks now says, "Lino service has been reasonably good. I wouldn't say it's been great. We n ow get very competent advice on the phone. And in terms of local service calls, it's usually within a day. And there haven't been many calls on the RIP."

There is a constant supply of problems, but they appear to be as indicative of the creative nature of the work as the "buggy" side of a new computer system

But as the technology is getting better, so are the demands. The growing use of scanned, multiple gray-level images puts a great tax on Lino systems. As color overlays and process separations are being performed on the Lino, so the demands on accuracy and (in the case of process seps) detail are becoming all the greater. The high-resolution jobs require L-300s and 2540 dpi printing to film negatives, along with precise registration in the case of separations, and the consequences of errors can be multiplied by the number of separate copies. In spite of being generally pleased, Brooks has "a concern in terms of the relative context of the whole thing being slow. We're talking about 4 minutes a page at 1270 dpi, which sounds very good, because we all know what the times have been in the past. When we talk about moving towards color separations, which we're doing work on now, and talking about printing 2540 dpi, we are talking about 8 minutes a page, times 4 or 5 separations per page. The problem is that, in a relative sense, the L-300 is a slow machine."

And more and more businesses are totally dependent on the Linotronic machines. At Design North, says Brooks, "If our L-300 goes down, we're in really bad shape. We have such intense pressure on the machine."

New programs take and bend PostScript all the further, and place ever greater demands on imagesetters. Customers have bigger and more ambitious pages to run.

In spite of basic satisfaction, Linotronic shops like Brooks's want more. "Performance-wise, we are largely happy with Linotype. Unfortunately anything less than 100% guaranteed performance isn't good enough. So while generally we're happy, it doesn't wash when there's a 300-page catalog, 1% of the pages of which do not run. Especially when there's a web press waiting at $300 an hour. Sometimes, just to get the job done, we'll fall back to a conventional key-line and negative."

Is an Imagesetter a Good Investment?

The basic issue is cost. Linotype machines cost serious money. A minimum configuration for a L-100 Mac configuration is around $40,000. A typical L-300 setup costs $70,000 or more. These prices do not include the cost of a film processor which forms the back end of the system. At these prices, L-100s and L-300s are not inexpensive.

Then consider the running expenses — es pecially if you have to pay salaries for operators and lots of free consulting time, film and chemical costs for the film processor, and interest on a loan, along with normal business overhead—marketing, debt collection, and so on.

Obviously, the average rate of processing dictates the profitability of these machines. Let's assume that one could put a page out of an L-300 every 5

minutes. That's 12 pages an hour. At 14 real working hours a day (a typical situation, with two shifts and some down time), that's 168 pages. If we charge $10 a page (a little high), that's $1680 a day, $8400 a week, over $420,000 a year. Not bad, you might think, but that kind of mechanical regularity in terms of production is unknown, approached only on the best weeks by the very best operators. As Steve Werner of Central Graphics (San Diego, CA) says, "Anyone can operate a Linotype machine until problems come up — the trouble is that problems come up on almost every job."

Glen Cruzen of Image Express (in Orange, CA) figures his break-even point on the lower-capacity L-100 is $3000 a month—with film, interest, depreciation, and maintenance. That's before taking into account salaries and business overhead. Service bureaus are big money losers at the start until the customer list and the expertise are built up. Frequently they are supported by other, profit-making lines of business like traditional typesetting until they get on their feet. And Linotype machines are very hard to cost justify in most other business situations, unless they can be kept busy for 12 or more hours a day.

Manufacturers Challenge the Linotype Monopoly

In spite of a growing satisfaction with Linotype's products, service bureau owners will welcome a serious challenge to Linotype's monopoly on the high-resolution imagesetter market. Few owners are happy with the prices of Linotron equipment and software.

As Brooks says, "The current RIP 2 is a far superior performer. It should be, for the price tag. Even at that, the price tag isn't justified and I'll be very happy when there's good, stiff competition." And Brooks repeats a common lament: "There's no bargaining with Linotype. It's retail price only with them." According to Brooks, he paid $26,000 for the new RIP. "They give you $5,000 for your old RIP and you get one copy of Adobe Illustrator, too."

Others have similar laments. Cruzen states that "Linotronic is really soaking people. To move up from the 40 megabyte hard disk to the 80 meg disk costs an additional $6,200." This when 80 megabyte hard disks are available for $1400 and less in the open market. "A customer of mine upgraded to the 80 meg on the Lino 100 and Linotype was going to take away his 40 meg. He said, *'Wait a minute! Where are you going with that?! I paid for that, that's mine!'* That's (Linotype's) attitude. With Linotype, you pay retail, their retail!"

Competition is on the horizon. Other typesetter manufacturers like AM Varityper and Compugraphic are developing alternatives to the Linotronic series. These range from translators which convert PostScript output into the appropriate typesetting code, to the recently announced (but not yet shipped) PostScript processor for the Varityper 4300 typesetter.

"Anyone can operate a Linotype machine until problems come up — the trouble is that problems come up on almost every job."

Two new arrivals, Knowledge Engineering(New York, NY) and Birmy Graphics (Miami,FL) are also entering the fray. Both have announced new, high resolution imagesetters for less money than equivalent Linotronic technology. The UltreSetter and BirmySetter were demonstrated at the Seybold Desktop Publishing conference last winter. At announced prices of $20,000 and $34,000, there is a very good chance that these two machines will radically change the imagesetter market, putting such machines within the budgets of many more institutions.

The effect of cheaper imagesetters will be very salutary for everyone (with the possible exception of Linotype). One of the chief problems with the currently priced offerings is the great difficulty and expense of experimentation. Users tend to be very conservative with Lino machines, taking care to do things that they know can be done. When money and time become less of an object (and with the performance improvements that competition is bound to bring), users will probably exercise more creative freedom.

One caution about new imagesetters. Products are easier to announce than to deliver. Only after substantial research, development, mistakes and refinements has Linotype been able to deliver an efficient system. As Kay Downs at Waldman says, "Lino is not my all-time favorite supplier, but the reality of what they have done has to be recognized as very difficult. The reason they have had no competition up to now is because it's that hard to do what they've done. They have done an incredible job. And AM and Compugraphic's new offerings are just like Lino's stuff two years ago. Making a good imagesetter is extremely tough, a major piece of work."

Next Issue

The most challenging thing you can attempt on a Linotype machine is color separations. And it has been only in the last few months, with the arrival of Adobe's Separator and Aldus's Freehand, that the tools have been available to experiment with producing color separated negatives from PC-based graphics programs. Magazines like *Verbum* have been the pioneers of full color magazine production on the personal computer.

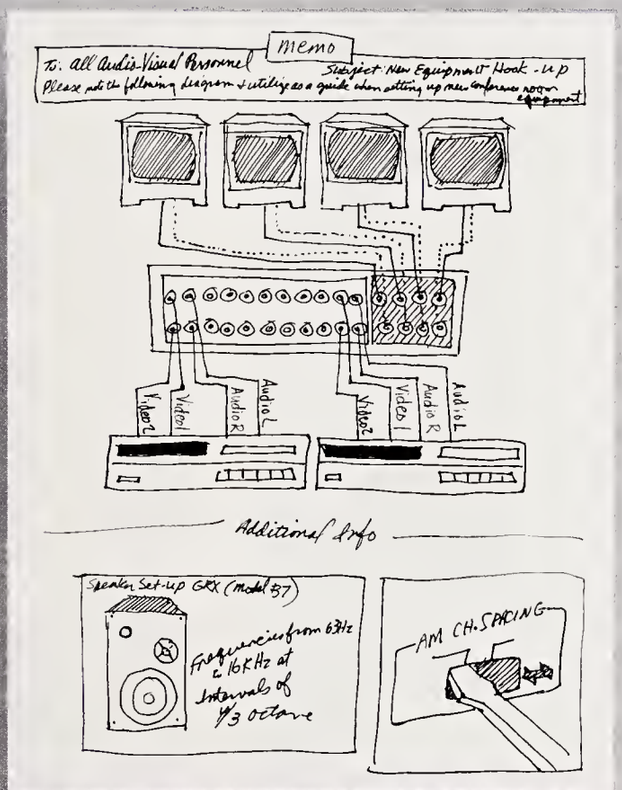
But even with these increasingly sophisticated tools, the task of satisfying the demands of professional designers, their clients and printers is not easy. There are pitfalls that everyone is just learning about through trial and error. Look closely at the cover of the last issue of *Verbum* and you will see "moire" patterns on the brown planet on the cover. It was only with a considerable effort that even more obvious moire patterns were suppressed. The color brown, with its nearly equal intensity of the primary process colors, is a challenge to produce cleanly using any separation process. The very highest quality of color separations are simply yet to be achieved with PostScript imagesetters.

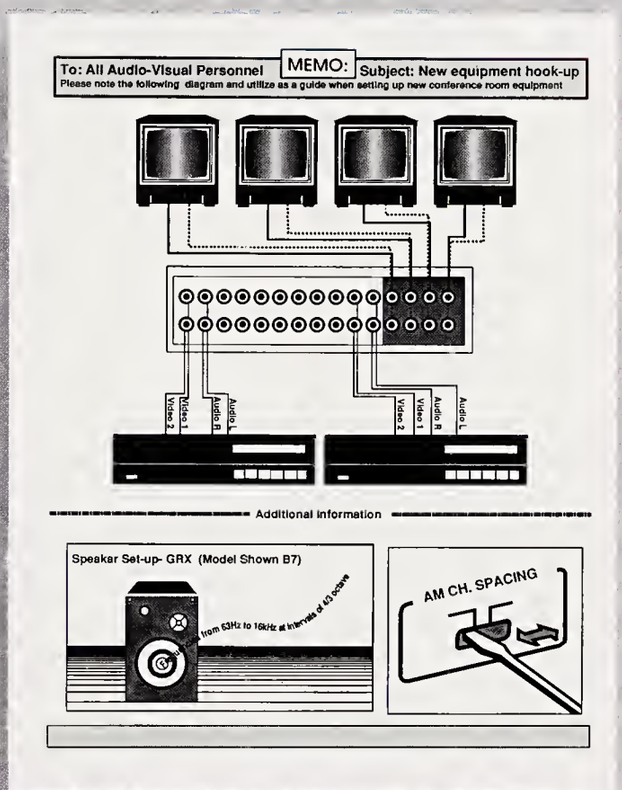
In the next issue, I'll talk with designers and service bureau managers about their first attempts to reproduce color graphics from personal computers and continue to explore the exciting possibilities of the new technology. As usual, we'll stay away from the party line you might find in other magazines, and objectively study the state of the art of PostScript color technology.

NIRA

Backyard
An ImageStudio painting that began with the images from artist's Los Angeles residence and became something quite different.

Why You Need Cricket Draw





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by John Odam

ILLUSTRATOR 88

My first encounter with Illustrator 88 took place at Stanford University in March. A room filled with Mac IIs and art directors fell silent as Russell Brown of Adobe Systems took us through a tutorial on the auto-tracing tool -- a means of converting bitmapped art to postscript graphics semi-automatically. John Iseley of *Science Illustrated* sat mesmerized by

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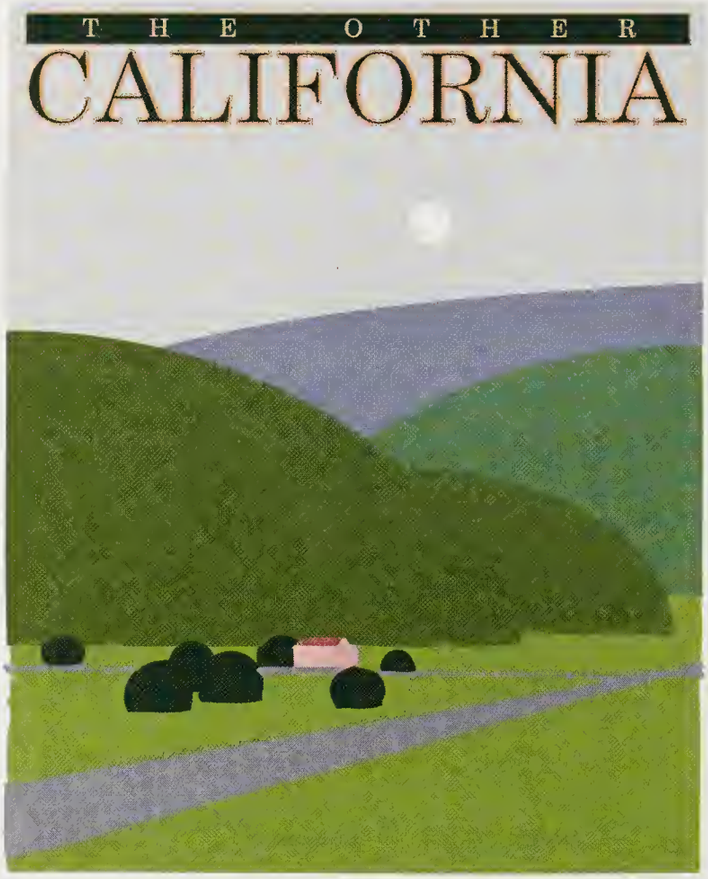

the screen. His lower jaw fell at least six picas while Russell demonstrated the transformation of a cartoon country musician into a colored pattern background. "I stroked my guitar and filled it with blue", explained Russell lyrically.

Following on from the highly successful Adobe Illustrator 1.1, Illustrator 88 introduces at least five new features that make the program even more powerful and versatile: on-screen color, a freehand drawing tool, auto-tracing, merges, and repeated patterns.

Perhaps the most obvious advance is the color display. Illustrator 88's screen display in color is a quantum leap from the old monochrome version both in definition and subtlety. Minute differences in shades are quite perceptible, and tonal gradations are smooth and relatively free of banding. With enough RAM, one can see changes in the preview window in real time by using the split screen technique.

The sketch tool is a welcome addition to the palette. It works smoothly and reliably, and is suitable for most general-purpose drawing. The pen tool with its unusual weaving action is still there for really precise drawing.

The handiest tool for time-pressed designers is the auto-trace. One of the hardest things to do is to capture the freedom of a pencil sketch in the computer, and this new tool does this beautifully. Some care has to be given to the character of the bitmapped scan one is attempting to trace: it will generate closed pathways, or loops — not lines. I was struck by the similarity of the end results to Japanese wood cuts. Random errors introduced by uneven lighting in the scanner combined with overshooting and corner cutting by the autotracer yielded quite unexpectedly humanistic results.

2

1. Poster design. PixelPaint was used to work out the basic illustration and color scheme. the PixelPaint art was saved as a MacPaint file and placed into Illustrator 88 as a template.
2. Spot art. A pencil drawing, scanned with MacVision and autotraced in Illustrator 88 has something of the character of an oriental block print.
3. Diagram. Here a design that was originally executed in Illustator 1.1 was pulled through Illustrator 88 and given color treatment.
4. Logo. The graduated floor of the tunnel consists of two thin horizontal rectangles merged in twenty stepsfrom light to dark. The black tunnel masks the shape and provides the prespective.

The most unique of Adobe Illustrator 88's innovations is the merge tool. Objects can be metamorphosed into other objects, simultaneously changing shape and color. On a conceptual level, this presents some intriguing design possibilities: can a logo for a merger of two companies be created automatically? Can a silk purse be made out of a sow's ear...? In practice, the effects are sometimes capricious and unpredictable, but, more often than not, delightful.

Another use of merges is to create graduated areas: linear, radial, or irregular. This works very well to simulate airbrush effects within irregular objects. Filling any object with a linear gradation, however is not so straightforward and requires masking. The merge tool takes some practice to master and it will present quite a challenge to the new user. However, it is an extraordinarily potent and flexible function well worth the effort in learning.

Pattern fills always conjure up for me visions of those rattan-filled ellipses that characterized early Macintosh art, and I generally try to avoid them. But patterns can be fun too — especially in color. A graduated fill can also be a pattern, which can then be applied to type, making possible for the first time graduated filled fonts.

All of these advances in software portend greater complexity and I can foresee how things can easily get out of hand — both aesthetically and from the printer's point of view. But the new effects offered by the program are sufficiently reliable to tempt even the most cautious of us to venture into unknown graphic territory.

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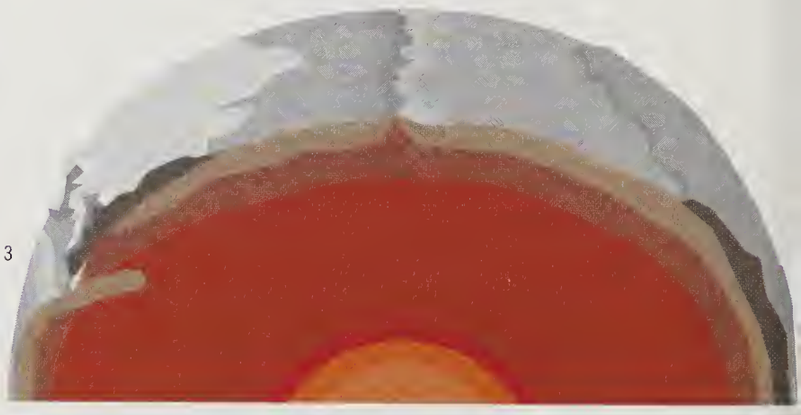

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5. Diagram. Several different line drawings were scanned and autotraced, then combined to generate a schematic anatomical.
6. Metamorphosis. A house turns into a tree to test the unusual possibilities of Illustator 88's merge function, unique to this software.
7. Flyer. Here the merge functtion is put through its paces to produce a fake airbrush effect on the legs of the dancer. Neo-cubist fragmentation imagery is the result of merging in three steps the two mirror images.

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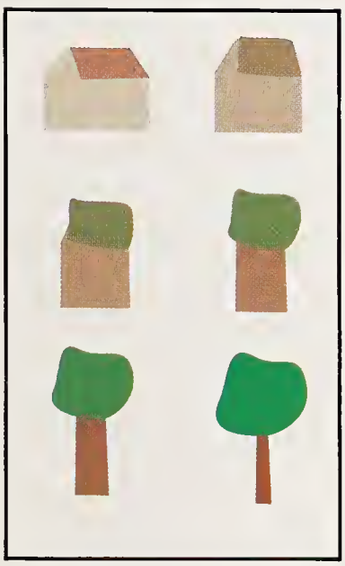

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FIRST CONTACT

How to Buy the Right Monitor.

Let's cut through the hype and misinformation about large-screen monitors for desktop publishing. At Moniterm, we developed the first large-screen monochrome monitors. And based on 9 years of OEM experience, we've now built a family of large-screen, hi-res monitors for every application.

What size and shape monitor is best?

Page-size portrait monitors are great for word processing, but impractical for desktop publishing. To avoid constant zooming and scrolling, we recommend a 19-inch landscape monitor, like our Viking 1 for the Mac SE and Mac II. Professionals who want to view two *full-size* facing pages will need an even larger monitor—our new 24-inch Viking 2400—Moniterm's largest monochrome monitor.

What resolution is required?

Optimum publishing resolution for 19-inch or larger monitors is 1280x960 pixels, featured on our Viking 1 and Viking 2400 monitors. At less than 72 dpi (dots per inch), fine print becomes too hard to read. Resolutions more than 95 dpi also make characters hard to read and unfocused. And screen updates are painfully slow.

Should I get a monochrome or color monitor?

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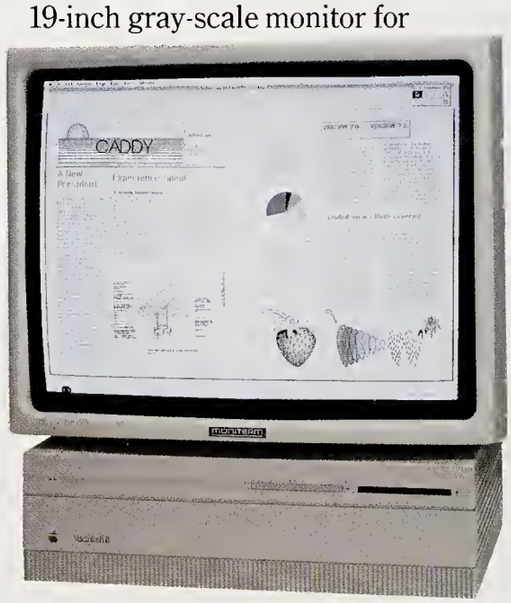

Viking 2400 24″ monitor.

differentiating objects on the screen. It features 256 shades of gray for near-photorealistic images. And, you'll benefit from sharper text and lower cost.

For previewing spot color and creating desktop presentations, the Viking 10 19-inch color monitor offers flicker-free, totally sharp color images.

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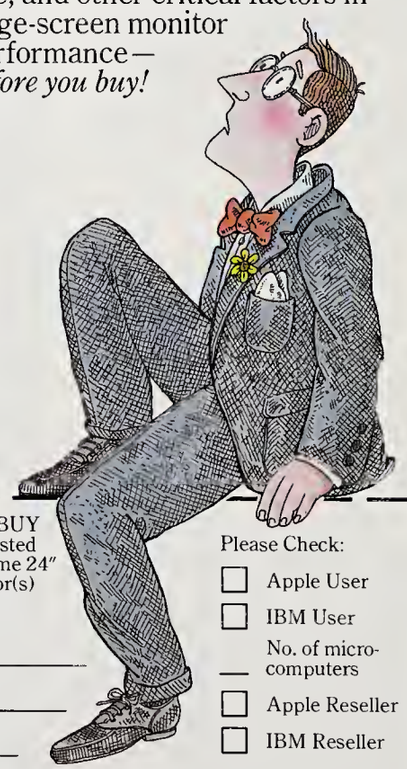
Those are just a few of the many tough questions people are asking about large-screen monitors. We've got the answers. Write or call us for your free copy of our informative booklet, *How to Buy the Right Monitor.* It includes simple tests you can perform to check for flicker, refresh rate, screen update speed, readability, glare, ease of use, and other critical factors in large-screen monitor performance—*before you buy!*



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VB-7

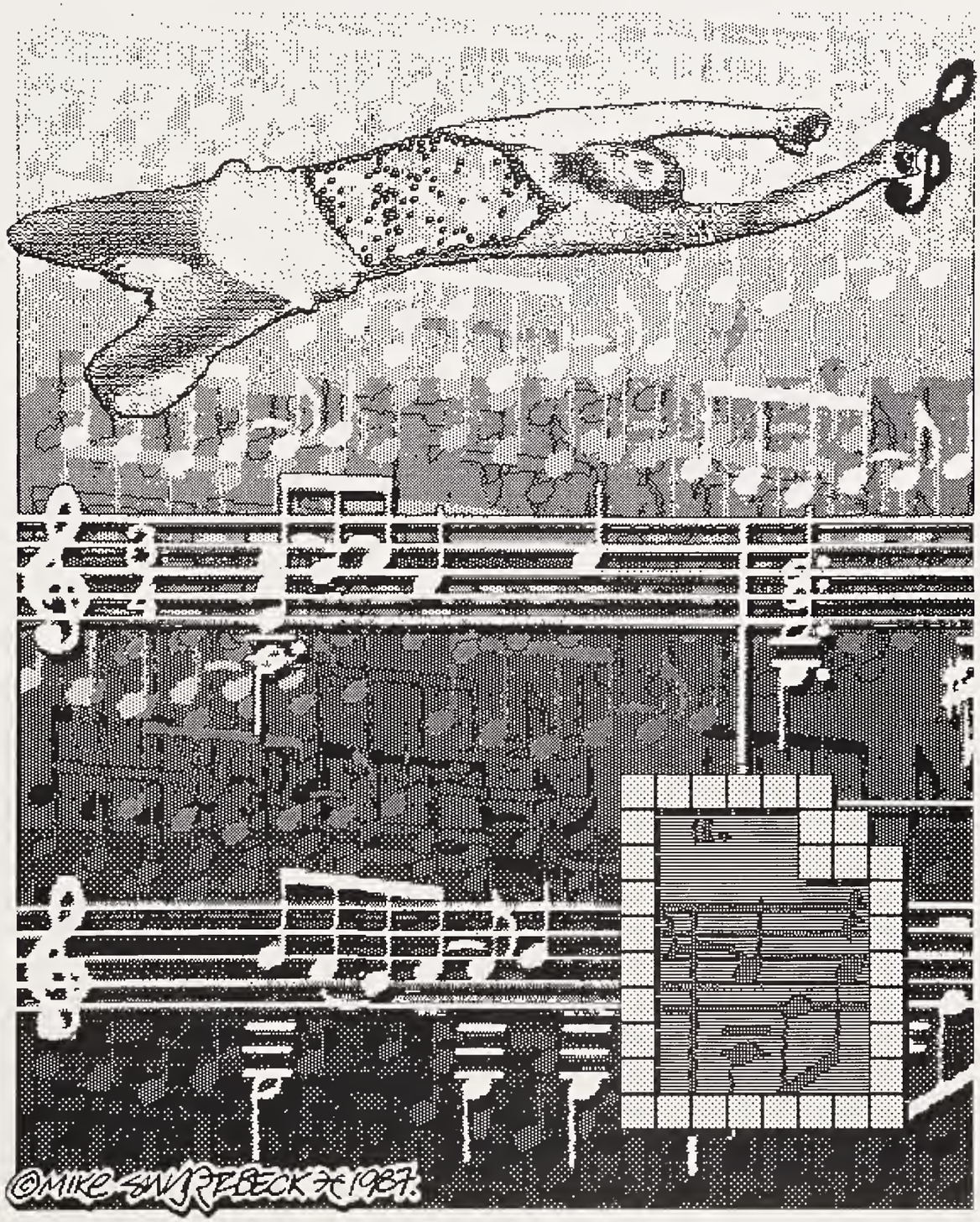
SOUND SAMPLING SENSATION

■ *By Neil Fox*

Sampling. Some of us hate it, some of us love it. Some of us don't have a clue as to what it is. But like it or not it's here to stay. We dial 411 and the friendly human at the other end turns us over to her robot sister who gives us the number and then thanks us for calling. (I don't know about you, but there's nothing like a polite machine to make me feel all's right with the world.) Max Headroom's voice, sound effects for movies and video games and simulated orchestras are all created with samplers.

So this is probably a good place to explain exactly what sampling is. Basically, it's a tape recording of any sound. But instead of storing the sound on tape as an actual sound (analogue recording), it's recorded digitally as a series of numbers that any computer can store and manipulate.

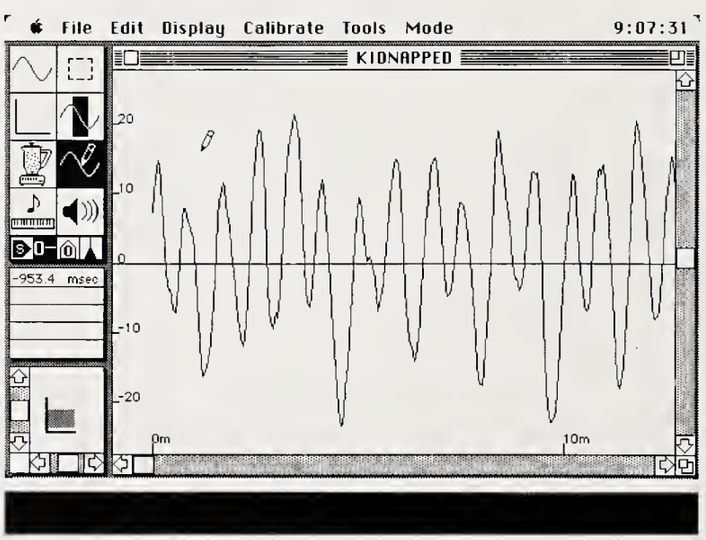
Sampling is to sound as scanning is to vision. Just as a scanned image is made up of thousand of dots - "samples" of the real picture - a sampler takes thousands of samples of the sound's waveform. The screen on page 26 shows a simple waveform. A sampler would take up to several thousand "snapshots" per second. Each dot represents one sample. Just as in digital visual art, the more samples the better the resolution. And just as in a scanned picture, your mind will connect the dots and fool you into thinking you're hearing a duplicate of the sound wave. (Just to confuse the issue, the word "sample" is used to mean the whole recording as well as each individual snapshot.) If you had an extra $200,000 or so you could get a Synclavier which is a top of the line sampler. You may have to sell your house to get it, but you'd be able to sample at a rate that can exceed that of



human hearing. Let's all go over to Frank Zappa's house. Maybe he'll let us play with his Synclavier.

But just in case Frank's not home, we should consider using some of the low end samplers. These days you can get some interesting sampling synthesizers, or software that can turn your computer into a sampler. And they can do many of the things the big boys do at a fraction of the cost. The main limitation is the "bandwidth" of the sample.

Bandwidth, in audio parlance, is simply the range a person can hear, from the lowest bass to the highest treble. Anyone under 65 who doesn't wear a ghetto blaster on their shoulder, or live near an airport can hear from 20 vibrations per second (20 hertz) to 20 thousand per second (20k hertz). The general rule is that your sampling rate, which is how many samples per second you can set your sampler to record, has to be about twice the bandwidth. In other words, to hear the sample play back at full bandwidth (20-20k hertz) you will need a sampler that can sample at 40k samples per second or better. What this translates to in the real world is that you need lots 'o' memory to sample at full bandwidth.



Sound Designer

But full bandwidth isn't necessary for all things, and that's where experimenters, educators and hobbyists can get into the act. From 10k hertz on up you hear the ultra high end of sounds. The attack of a cymbal, the ping of a triangle.

Just because your sampler can't record anything higher than an 8k, or 5k bandwidth doesn't mean you can't record the cymbal. The only difference is it will lack some of the brightness. The shine will be missing. That, however will not limit us for many uses. Naturally you won't want to record a finished album without the full range of sound, but what about having music or speech coming out of your PC.

High fidelity isn't necessary to have understandable speech. The telephone companies get away with a very limited bandwidth and it's still pretty understandable (with an occasional "F for Frank and S for Sam"). The uses are only limited by your imagination. And it's as much fun as the first time you played with Macpaint.

One of the new sampling-editing packages for the Macintosh is called MacRecorder. I was pretty amazed to find that you could not only record your own sounds with it, but it comes with an editing program that has many of the same features as my Sound Designer program (Digidesign).

It comes with a little box that plugs into the modem or printer port. With this box you can record into the built in microphone or directly from your record, CD or cassette player. You can even record in stereo if you buy another MacRecorder. Although stereo seems like a waste to me, since the bandwidth is limited to 10k and stereo would most often be used for high quality music.

There are many sampling keyboards on the market today such as the Casio SK-100 (under $200), but for anything close to pro quality you'll be getting into the $1,000 and up, and up, and *way* up zone.

The sampler I use is the Akai S900. You can get it for about $2,500 but you will need some nice things to go with it. It's not much use without a controller keyboard, like a Yamaha DX7 or Roland D-50, which are synthesizers that can also be used for controlling outboard gear via MIDI. It would also be nice to have a computer with sequencing and sound designing software. Of course we have now plunged out of the zone of "let's sample Johnny's first words," and into the zone of "how much does the gig pay?"

Which brings us to one of the reasons for using samples. I recently finished co-scoring the music to the sequel to "Attack of the Killer Tomatoes" called (what else) "Return of the Killer Tomatoes". The movie had a low budget so my co-writer, Rick Patterson, and I used all the sampling tricks we could to make the film sound like the producers spent big bucks.

One of the more obvious things we did was to use samples of string sections instead of, or in addition to, real strings. The same went for brass and woodwinds. (This is one way to give the director the effect he wants without having to mortgage your house.)

On the more creative side we used samples to create sounds that don't imitate anything in the "real" world. At one point in the film the hero walks in to find his new girlfriend eating plant food. He realizes that she is really a tomato. This was a very tense moment and we needed an effect to match the horror as the camera zoomed in on their faces. For that effect we sampled an orchestra from a CD. I then played back the orchestra and pitch bent it down several steps while adding a bizarre echo effect. (The sound of an orchestra getting bent is something to behold.)

Another way we used sampling was to use familiar sounds out of context. For instance, some of the drums on the soundtrack are not drums at all. We used gunshots, door slams, garbage cans clanking, anything we could think of to create interesting percussion sounds.

For a solo album that I'm working on I recorded several news programs, then found individual words to sample. I took the words (ie. "bloodshed, drug-barons, kidnapped" etc.) and with my sequencer created a rhythm pattern that fit into one of the songs.

Sampling does have limitations, though. The main one is memory. In an ideal world where we all have unlimited memory, you would have a sample of each note of a violin on each key of the keyboard. In actuality we have to "stretch" each sample as far as we can. In order to understand this concept, a little explanation is in order. When you "place" (sometimes called "map", "program", "patch", depending on the manufacturer) a sample on a keyboard, you can have it play the entire range of the keyboard or restrict it to one or more notes. The problem with using it to cover a wide range is that it reacts the same as a sped up record (when you play higher up the keyboard) and a slowed down record (you guessed it).

With some sounds you can get away with stretching further before the cartooney effect sets in. Strings, for example, can usually be stretched about seven half steps before they sound unrealistic. But the human voice will start to sound funny in about three half steps.

So, what this all means is that you need a sample for every few notes, depending on how critical you are and how much memory you have. Also, if your sampler allows you to set the sampling rate (some samplers have only one or two settings while others are continuously variable) you can use a lower rate for sounds that don't have many "highs" in them, thus saving more memory.

The length of the sample also eats memory. That's where "looping" comes in. Looping is an art in itself. The basic concept is to conserve memory on sustained sounds by finding a good point at which the sampler can repeat playing that sample. If you find the right point, the loop will be seamless and you can sustain a note forever while using little memory. Great concept, but it can be very frustrating trying to find the "right" spot. It's kind of like having sex with someone new every time. This is one of the areas where sound editing packages shine. Once you have dumped your sample into your computer you can see a visual representation of the sound wave. This makes it relatively painless to find a good loop point. The more sophisticated samplers and editors also support "crossfade looping". Even with a visual representation it can still be impossible to find a good point on certain sounds. With crossfade looping the loop seams crossfade rather than hard splice so you can mask the seam.

Playing sounds backwards, editing voice overs, syncing sound effects to film or video are all easily done with this technology. The world is now as open to sound designers as it is to photographers.

Which brings us to the subject of "borrowing". For the most part, the jury is still out on this one. Common sense should rule, but it gets a little tricky here. It's wrong to steal someone's song. That's obvious and everyone knows that. It's wrong to steal a long phrase. But is it wrong to steal a snare drum hit? Or, on the micro level, is it wrong to steal a single sound wave? The only difference is in the "amount" you take.

If you digitize someone's picture, then cut out the ear, stretch it, rotate it, and paint it blue, is it now your ear or their ear? What if you only painted it blue? I leave these legal questions to the lawyers. From an ethical standpoint though, I think you should at least give credit to the artist you borrowed from if the sample bears any resemblance to the final product. But even that gets tricky. Did you cop Phil Collins' snare or did you hire a drummer with the same gear to re-create the sound? And if you can re-create the sound that way, why not save some money and cop Phil's snare? You see what I mean?

It would seem that from a non spiritual—physical universe point of view, there are no new "parts", only new "wholes".

Edited by Jim Hance

GRAPHIC ARTS PROGRAMS

Canvas™ 2.0 (for the Mac)
This new version of Canvas includes many improvements, to name just a few: support for color on Mac II, unlimited number of user defined layers, faster drawing and editing, drawing precision to 1/64,000th of an inch, improved text handling with PostScript resolution and color on character-by-character basis, unlimited number of control points on bezier curves, more import and export formats, improved paste/positioning control, new object types including "picture objects", TIFF objects and color pixelmaps, user-defined line weights and gray scales, more powerful desk accessory program. Suggested retail price for Canvas 2.0 and Desk Accessory Program $295; Canvas Desk Accessory 2.0 sold separately, $125. Deneba Software, 7855 N.W. 12th Street, Suite 202, Miami, FL 33126. (305) 594-6965.

Adobe Illustrator 88™ (for the Mac)
This new version of Adobe Illustrator is now shipping and includes color, a freehand tool, a blending (or interpolation) tool for blending shapes, line values and color, custom PostScript resolution-independent pattern fills, and masking tool which can be used for creating transparent objects among other effects. The cover of last issue, and *First Contact* in this issue, show some of the effects that can be created with this program. Retail price is $495, with special upgrade prices for registered owners of previous version. Adobe Systems Inc, P.O. Box 7900, Mountain View, CA 94039-7900. (415) 961-4400.

Aldus SnapShot ™ (for IBM PC AT or PS/2 Model 30)
This software product captures and freezes images from any RS-170 video source, including video cameras, VCRs and camcorders. Sharpening images, contrast adjustment, mirror images, adding fill patterns, line conversions, airbrushing and posterization are some of the special effects that can be applied to images within the program. Images are saved in formats suitable for placement in page layout programs for the IBM such Aldus PageMaker. Suggested retail price is $495. Aldus Corporation, 411 First Avenue South, Suite 200, Seattle, WA 98104. (206) 628-6674.

3-D GRAPHICS PROGRAMS

ModelShop™ (for the Mac)
This is a program designed specifically for architects and urban designers to quickly create and develop conceptual models. It features a broad range of graphic primitives, flexibility in viewing and manipulating objects, multiple active models and windows, perspective, axonometric and orthogonal views (wireframe or with hidden lines removed). With its ability to handle up to 5,000 objects, the program is designed to carry a project from the site scale down to the details. Requires only a Macintosh 512K, but with a Mac II it shades objects in monochrome according to a user-specified light source. Scheduled for release in July, suggested retail price is $495. Paracomp, 123 Townsend St., Suite 310, San Francisco, CA 94107. (415) 543-3848.

Super 3D™ (for the Mac)
This is a color 3-D program designed for easy creation and animation of three dimensional images. Applications include logo design, product models, presentations, architectural renderings, animated walk-throughs, 3-D graphic art, advertising art and animated storyboards for movies and TV. Two-dimensional objects are "revolved" by any number of degrees to produce a third dimension, and these 3-D objects can then be "extruded", scaled, flipped, replicated, mirrored and combined to create complex objects. Movie camera-style tools allow objects to be viewed from different angles with up to four light sources creating very subtle and controllable shading effects. Additional windows can be opened at the same time for viewing other angles, or viewing in perspective. Files are saved in EPS or PICT formats. Two versions are available: Super3D (suggested retail price is $295) and Super 3D Enhanced (which takes advantage of color capabilities and additional math co-processor capabilities of the Mac II – suggested retail price is $495). Silicon Beach Software, Inc. P.O. Box 261430, San Diego, CA 92126. (619) 695-6956.

Swivel 3D™ (for the Mac)
This is a color 3-D modeling program featuring "Linking". Linking allows for building realistic images with moving parts, like switches and knobs, that activate other moving parts, or even more complex objects like human forms with arms and legs that move naturally. A series of objects can also be linked and given common color and line values with a single command. Multiple windows can be open at the same time with fast redraw times. Tools are designed specifically for viewing images in different perspectives quickly (i.e. zooming, rotating on three axes, moving objects, and setting colors). For animation, Swivel 3D has a "tweening" facility that saves numbered frames as paint files which can be used with VideoWorks. Paint images can be projected onto 3-D surfaces. Images can be moved to other programs such as Illustrator™, ImageStudio™, MacDraw™, SuperPaint™, PixelPaint™, Cricket Presents™, PowerPoint™, etc. through the scrapbook. Images are saved either in PICT or paint formats. Requires at least 1 Mb of RAM (2Mb or more, hard disk and color monitor recommended). Suggested retail price is $395. Paracomp, 123 Townsend St., Suite 310, San Francisco, CA 94107. (415) 543-3848.

Sculpt-Animate 3D™ (Amiga, soon for Mac II)
After selling 10,000 copies of this 3-D animation program for Amiga to television production companies to create storyboards for "Max Headroom" and Martin Marietta Corp. to design and animate a new fighter helicopter, Byte by Byte intends to come out with the Mac II version in late 1988. The program features textures, shadows, up to 256 colors, object rotation, camera movement, real-time wireframe playback and ability to record to videotape. Retail for Mac II will be about $1000. Byte by Byte, 9442 Capital of Texas Hwy. No., Ste. 150, Austin, TX 78759. (512) 343-4357.

CADD GRAPHICS

Interpreter/VersaCAD ™ (for the Mac)
The complete range of design and drafting features of a total CADD workstation with applications ranging from conceptual design, presentation, detailing, drafting and documentation is now available on the Macintosh. Interpreter/VersaCAD is a direct interface between Dimensions 3-D™ CAD software (3-D product design and presentation graphics software) and VersaCAD/Macintosh Edition™ (2-D

drafting and detailing software) to create the first complete computer aided design and drafting (CADD) solution for the Macintosh. The interface is direct binary to binary for fast and accurate translation, and bi-directional between the two software products. Interpreter/Versa CAD was developed as part of a strategic alliance between Dimensions and VersaCAD; registered owners of both programs for the Mac will be provided with the translator free through August 31, 1988, and VersaCAD will be offering a $100 rebate to Dimensions users. System requirements are a Macintosh II with two megabytes memory, or a Macintosh Plus or SE with one megabyte memory, a math coprocessor and a hard disk. Suggested retail price for Interpreter/VersaCAD is $295. Visual Information, Inc. 16309 Doublegrove, La Puente, CA 91744. (818) 918-8834.

TYPE FONTS

LaserPerfect™ Fonts (for the Mac)
A Connecticut company, NeoScribe International, Inc., is now publishing several new downloadable PostScript fonts, including Fractions (which creates unlimited fractions in text without constant size and style changes for both Times and Helvetica, plain and bold styles), Digital (which emulates the liquid crystal display type), Kangaroo (based on architectural handwriting), Arabic (includes all consonants in each of four forms, numerals, ligatures, vowel signs, and other diacritics, a version of the MacKey-meleon™ desk accessory, a keyboard layout with Apple's Arabic Interface System, and conforms to standard Arabic code), Antique (based on woodcut letters), Neuland (sans serif stone-carved letters), Railway (based on Eric Gill's sans serif face), MacAngelo and Oldstyle (display caps and numerals designed to be used with Palatino, Baskerville, Bodoni and Galliard). Price per font $55 except Arabic ($125) and Railway ($95). NeoScribe International Inc., P.O. Box 633, East Haven, CT 06512. (203) 467-9880.

Publishing Packs ™ (for Mac and IBM Compatibles)
Adobe has released three sets of typefonts packaged specially for specific business applications including newsletters, forms and reports, and displays and presentations. Each set includes three type families and a how-to booklet written by a noted designer. Roger Black, former art director for Newsweek, New York Times and Rolling Stone selected the typestyles ITC Franklin Gothic, ITC Galliard and Century Old Style for Publishing Pack 1: Newsletters, and explained in the booklet: "The typefaces I've selected are by no means the only ones that can be used in these applications. They are simply three the user can rely on to work consistently well together." Suggested retail price for the set is $395 ($605 sold separately). Adobe Systems Incorporated, P.O. Box 7900, Mountain View, CA 94039-7900. (415) 961-4400.

CUSTOM TYPE FONTS

Logos On-Line™ (for the Mac)
Would you like to incorporate your company's signature in your desktop publishing system as a custom character in a downloadable PostScript font? Software Complement of Matamoras, PA has developed a new service to do just that. Called Logos On-Line, they will render your company's logo, signature and other custom symbols and assemble them as one downloadable font set, including screen font, printer font and apd document. The cost of rendering a logo only averages about $200, but may range from $125 (simple) to $600 (complex). A full custom font character collection including about 90 proprietary characters of a sans serif design would cost about $2000, and more elaborate decorative designs may be priced much higher. The company also sells the Complementary Type line of PostScript font and symbol packages.Software Complement, 8 Pennsylvania Avenue, Matamoras, PA 18336. (717) 491-2492.

CLIP ART LIBRARIES

ArtRoom™ and DarkRoom™ (for the Mac)
These two packages include hundreds of images stored in the compact disc CD ROM format and retrievable through a desk accessory for placement in page layout programs. ArtRoom contains more than 1,000 PostScript images which can be modified in Illustrator™ or Freehand™, 150 color clip art images, 100 laser advertising fonts, and an 80-pp. reference catalog. Retail price for ArtRoom is $999. DarkRoom contains more than 500 professional advertising-quality photo images saved in the TIFF format which can be modified in Digital Darkroom™ or ImageStudio™. Subject categories include sports, lifestyle, business and travel. Photo images can be used freely as long as a credit line is given to the photographer. Retail price for DarkRoom is $499. Image Club, 2915-19 Street NE, Calgary, Alberta, Canada T2E 7A1. (403) 250-1969.

Comstock Desktop Photography™ (for the Mac and IBM compatibles)
Comstock, Inc., a major commercial stock photography agency, is now publishing many of its most popular images on CD ROM. A 500-image disc will come with a 132-pp. color catalog and will include various subject categories such as people, vacations, sports, business, special effects, space, transportation, medicine, science, travel, Americana and scenics. The cost of each disc will be $500-$750 and the rights of usage will be limited to presentations and in-house publications. The rights to use the images for commercial purposes (advertising, promotions and publications for sale, for example) will require additional fees. Color transparencies of the images are deliverable overnight anywhere in the United States, so this package will be of particular interest to advertising agencies using stock photography. Comstock Desktop Photography, 30 Irving Place, New York, NY 10003. (212) 353-8686.

Clip3D™ (for the Mac and IBM compatibles)
Ten volumes of three-dimensional clip art will be released with a software program called Clip3D™ by Enabling Technologies Inc.. Using the program, the user can rotate, shade and light the clip art to create innumerable variations of the images which can be saved in formats compatible with popular layout and graphics programs. These images can also be further modified in Pro3D™ and Pro3D/PC™ programs. Enabling is also working with NEC Home Electronics on a library of 2500 3-D images which will soon be available on CD-ROM. Retail price of each volume of Clip 3D™ (including program) is $99. Enabling Technologies Inc., 600 S. Dearborn St., Suite 1304, Chicago, IL. 60605. (312) 427-0386.

COLOR SCANNER UTILITY

PixelScan ™ (for the Mac)
SuperMac Software announced royalty-free distribution to manufacturers of 24-bit color scanners of a scanning utility program that converts 24-bit color images to an 8-bit color or true greyscale format for use in Macintosh paint and draw applications which only support 8-bit formats. This utility, called PixelScan, can map the 8-bit image to the standard Apple palette, or create a custom palette which can be saved with the image as a PICT2 or PixelPaint ™ file. The utility program is expected to be bundled with Sharp, Howtek and other 24-bit color scanners. SuperMac Software, P.O. Box 390725, Mountain View, CA 94039. (415) 964-9694.

SCANNERS

Imapro™ Quality Color Scanner (QCS-35) (versions for IBM compatibles and Mac)
Here is a print-quality color desktop scanner for scanning color slides and color negatives for high resolution, 24-bit color output. The QCS-35 is the first desktop product to scan slides at 6000 lines horizontally x 4096 vertically (other products have been limited to 2048 x 2760). It is based on a scanning engine built by Nikon of Japan, and offers improved scanning speed and color density range. Originally designed as an add-on to an electronic color prepress and slide-making system, it is now available as a stand-alone product for the IBM PC and Macintosh. Suggested retail price for either version is $13,895. Imapro U.S. Inc., P.O. Box 67, Suffern, N.Y. 10901. (914) 368-2789.

Microtek™ MSF-400G Scanner (for IBM compatibles and Mac)
Microtek's latest product is a 400-dpi scanner designed specifically for high resolution output to the anticipated new generation of 400-dpi laser printers. This scanner will

LETRASTUDIO™ AND LETRASET® ELECTRONIC TYPE LIBRARY (FOR THE MAC)

LetraStudio, used in conjunction with Letraset's catalog of display typefaces which are now being converted for use on the Mac, will allow the user to set headlines with precise visual control of character spacing, and then stretch, distort, layer, set in user-defined shapes such as a circle, oval, etc., and "paint" with color and outline and fill attributes. Features include proportional and non-proportional scaling from 1 to 999 points, preset and adjustable kerning, grids, fine adjustment of baseline curves, and a template feature. LetraStudio and the first 100 fonts from the Letraset library are to be released by late 1988. LetraStudio will retail for $495, and type fonts will retail for approximately the same prices as Adobe® typefaces ($145-$185 for four- or five-font packages). Letraset USA, 40 Eisenhower Drive, Paramus, N.J. 07652. (201) 845-6100.

Crillee LIGHT ITALIC
Crillee ITALIC
Crillee EXTRA BOLD ITALIC
Italia BOOK
Italia MEDIUM
Italia MEDIUM CONDENSED
Italia BOLD
Romic LIGHT
Romic LIGHT ITALIC
Romic MEDIUM
Romic BOLD
Romic EXTRA BOLD
Romic Outline

recognize 256 shades of gray while providing high-resolution phototypesetting units 33% more information than 300-dpi scanners. Suggested retail price is $3995. Microtek Laboratories, Inc., 16901 S. Western Avenue, Gardena, CA 90247. (213) 321-2121.

ProViz™ Color Video Digitizer (for the Mac II)
Pixelogic's ProViz captures color images from color RGB cameras and gray-scale images from other video devices. Images can be saved in TIFF, PICT, RIFF, EPSF and HyperCard formats which can be edited in popular color graphics programs and printed on PostScript printers, the Tektronix color thermal printer or slidemakers. Retail price is $1695. Purchasers of the previous gray-scale model can upgrade to color for $295 (grayscale-only version is now reduced in price to $1095). Pixelogic Inc., 800 W. Cummings Park, Suite 2900, Woburn, Mass. 01801. (617) 938-7711.

COLOR IMAGE CAPTURE BOARDS

NuView™ (for the Mac II)
By installing this single-slot board inside the Mac II, real-time 8-, 16- and 24-bit color images from a video camera, VCR or video disc player can be captured and displayed on the screen. Included is AST's image processing software, ReView II™, which enables images to be manipulated, stored, printed or transferred to programs like Image Studio™, Digital Darkroom™, 3-D Animation™, Illustrator™, PageMaker™, Ready-Set-Go™ and others. File formats including PICT2, TIFF, EPS and MacPaint are supported. Retail price will be about $2000 when it ships in September, 1988. AST Research Inc., 2121 Alton Avenue, Irvine, CA 92714. (714) 863-1333.

ColorCapture™ (for the Mac II)
Following the success of their black and white QuickCapture board, Data Translation, Inc. is releasing two versions of ColorCapture. ColorCapture grabs 640x480-pixel images sequentially from up to three video devices. Images can be edited (sized, cropped, sharpened or softened, combined, subtracted, etc.) before exporting them to film recorders, VCRs and other Mac color applications. It contains a 16-bit frame buffer that allows display of up to 32,768 colors on a composite or RGB monitor. A new feature allows the user to syncronize capture of images with another event, such as the flashing of a photographer's strobe light. Suggested retail prices are: 2-Mbyte ColorCapture, $4250; 4-Mbyte ColorCapture; QuickCapture black and white image capture board, $995. Data Translation, 100 Locke Drive, Marlboro, MA 01752. (617) 481-3700.

FILM RECORDER

ProColor ™ (for IBM PC-XT, AT or Mac II)
Designed for the single business user requiring quality 35mm slides and 3x4 film output, the ProColor film recorder is compatible with most major presentation software packages for the IBM including GraphWriter II™, Freelance Plus™, Harvard Graphics™, Microsoft Chart™, Mirage™ and PC-Slide™, and the Macintosh version will support MacDraw™, PowerPoint™, MORE™, PixelPaint™, SuperPaint™ and Dimensions™. The PC version is shipping in July; suggested retail price is $6495. The Macintosh version is scheduled to ship in September; suggested retail price is $6995. Matrix Instruments Inc., 1 Ramland Road, Orangeburg, N.Y. 10962. (914) 365-0190.

MONITORS

V-Screen™ (for Mac SE)
This 15" vertical black and white monitor gives you a full 8.5"x11" page display for a modest cost. Screen resolution is 72 dpi. Monitor, controller card, INIT software and connecting cables are included in its suggested retail price of $1150. New Image Technology, Inc., 9701 Philadelphia Court, Lanham, MD 20706. (301) 464-3100.

CARTRIDGE HARD DRIVE

Data Pak™ Drives (for the Mac)
Artists, desktop publishers and HyperCard™ users share the same nagging problem: document storage. The 800K "floppy" is simply inadequate for storage of scanned images,

complex PostScript drawings, magazines, books and HyperCard stacks, even using file compression programs such as StuffIt. For example, scanned color images can become as large as 4 megabytes, and a typical magazine layout without scanned halftones will require 10 to 20 megabytes of disk space to store or transport to a service bureau for typeset output. Mass Micro Systems has announced it's new Data Pak 44.5 Mbyte removable cartridge hard drives. Besides providing large volume storage and portability, the new Data Pak cartridges are reputed to copy files faster and to offer more durability and security than megafloppies or other cartridge and tape backup systems on the market. Software is provided with each drive to offer the ability to partition each disk into up to ten volumes and provides password security to any of these volumes. Data Pak is available in six configuarations with prices starting at $1775. Mass Micro Systems, 550 Del Rey Avenue, Sunnyvale, CA 94086. (408) 522-1200.

AppleCD SC™ Drive (for the Mac and Apple II)
Now available in Apple retail stores is the new Apple CD-ROM Drive. The drive "reads only" from compact disks which can hold more than 550 megabytes of information each. Using programs such as HyperCard™, encyclopedias, atlases, catalogs, government documents, courseware, tutorials and other large volumes of information which have been recorded on CD can be quickly researched on the computer. The drive also can play commercial audio compact discs as it comes equipped with a headphone jack, two RCA audio jacks for external speakers and amplifiers and a universal power suply that makes it compatible with electrical standards around the world. By early fall, Apple will ship the AppleCD SC in other language versions – Kanji (Japan), British, French Canadian, German, French, Dutch, Swedish and Italian. A SCSI port is required. Suggested retail price is $1199. Apple Computer, Inc. 20525 Mariani Avenue, Cupertino, CA 95014. (408) 996-1010.

INSTRUCTIONAL VIDEOS

"On Becoming a Desktop Publisher"(Mac and IBM desktop publishing)
This is a slick, well-edited, fast paced set of two videos. One is called "Tutorial" and covers the use of the most common desktop publishing tools in both the Mac and IBM environments fairly objectively. The second is called "Demonstration" and consists of interviews with the presidents of leading companies producting desktop publishing products, each demonstrating the unique features his product has to offer in "equal time" segments. Products on "Demonstration" include the major page layout programs (PageMaker™, Ventura Publisher™, Ready-Set-Go™, Quark Express™ and Interleaf Publisher™), artwork software (Publisher's Paintbrush™ Windows/Draw Graph™, SuperPaint™ and Cricket Draw™), and the latest line of Apple LaserWriter™ printers. For anyone interested in getting into desktop publishing but uncertain about what the leading products can do, this video set can be used as a basis for intelligent purchasing decisions. Order directly from publisher for $49.95 + $4.50 shipping. The Computer Show Network, 1641 N. First Street, Suite 160, San Jose, CA 95112. (408) 437-8990.

"Think Like An Artist" (for desktop publishers)
The reason for this video should be obvious to anyone who has examined the profusion of byproducts from the much touted desktop publishing. Most desktop publishers lack design and graphic arts training, and their works prove it. Driving students must at least pass a written test before being allowed on the streets; not so with word typists turned loose with sophisticated page layout programs and laser printers. This video is aimed squarely at the entry-level desktop publisher or production assistant, and while it does not replace an art degree or an internship with a professional graphic design firm, it presents some basic design strategies that the beginner can easily put to practice: sizing and positioning graphic elements to create a clean layout, how to work with type (selecting style, size and number of columns, creating strong headlines and when and how to "kern" characters), steps to developing an ad and a newsletter from scratch, typesetting refinements and common typesetting errors to avoid. Retail price is $49.95. Invision, Inc. 60 Dedham Avenue, Neeham, MA 02192. (617) 444-4060.

Step-By-Step Videos ™ (coming soon)
Dynamic Graphics will be marketing educational videos on a broad range of visual communications subjects. Due for release in September are three videos on desktop publishing, prepress production techniques and calligraphy. Goldsholl: Design & Film company will produce the videos, and creative

director Morton Goldsholl described the videos' production techniques as employing "extreme close-ups, instant replays, comparison split screens, superimpositions and video highlighting...to reinforce and review content." Dynamic Grapics, Inc., 6000 North Forest Park Drive, Peoria, IL 61614-3592. (800) 255-8800.

BOOKS

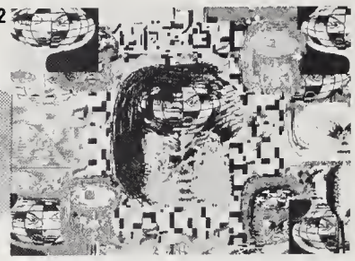
Making Art With Macintosh II — Maximizing the Mac II for Graphic Art and Desktop Publishing
By Michael Gosney and Linnea Dayton, editors of *Verbum*
Written by the publisher and managing editor of Verbum, the acclaimed quarterly Journal of Personal Computer Aesthetics, this is a comprehensive reference for graphics on the Mac II. For the graphic designer, illustrator or desktop publisher interested in taking full advantage of the Macintosh II's powerful graphics capabilities, Making Art with Macintosh II provides invaluable guidance and covers all the leading software and hardware products. With many art samples, including 16 pp. in color. Price: $22.55. Scott, Foresman and Company, 1900 E. Lake Avenue, Glenview, IL 60025
(312) 729-3000

Creative Computer Imaging
By Joan Truckenbrod, The School of Art Institute of Chicago
The "great technological leap forward," as the book characterizes the personal computer, has offered the fine artist phenomenal graphic power which can be intuitively integrated into the creative process. Scholarly yet engaging, the book primarily elaborates on computer techniques in creative expression and avoids discussion of machine- and software-specific features. 1988, Prentice Hall, Inc , Englewood Cliffs, NJ 07632.

MISCELLANEOUS

Font/DA Juggler™ Plus (for the Mac)
The latest and greatest version of this desk accessory and font manager. Opens up to 12 files of fonts, desk accessories, FKeys and sounds at one time and simulataneously updates all open applications. Views font names in their own font in each of 9 styles, and with Font Resolver™ automatically resolves font numbering conflicts. Also compresses fonts to regain about 40% of the disk space used by fonts. FKey/Sound Mover™, Font Resolver™, Font/DA Utility™ and 50 public domain fonts, DAs, FKeys and sounds included. Suggested retail price is $59.95. ALSoft, Inc., P.O. Box 927, Spring, Texas 77383-0927. (713) 353-4090.

Image Card (color business cards)
Now your business card be enhanced with a full color image without paying an arm and a leg for printing. A new service bureau specializes in creating low cost color business cards (standard 3.5" x 2" size) from PICT and TIFF color images on photographic-type card stock. A catalog of computer-generated art designs is available from which to select, or customer-supplied photographic art can be used. Cost is $34.95 for the first hundred cards, and $15 for additional hundreds. Brilliant Color, P.O. Box 1103, Palo Alto, CA 94302. (415) 969-6309.



1 Frame from **"Dead Man's Party"** Oingo Boingo concert video.
2 "I Guess I Might as Well Go Ahead and Cry" created with Deluxe Paint II on the Amiga.

GEORGANNE DEEN'S ROCK AND ROLLING AMIGA

Georganne Deen is a well-known Los Angeles artist who has been influenced by the underground comic book artists such as Ed "Big Daddy" Roth. But hers is a distinctive 80s style, seen in Esquire, Vanity Fair, Playboy, the FACE, LA Style, Mademoiselle, Money and many other publications, as well as on album covers for Oingo Boingo and J Geils Band. She has had numerous gallery exhibitions in Los Angeles, New York and Tokyo.

In 1986, Charlie Unkeless, the lighting designer and merchandizing manager for the L.A. rock group Oingo Boingo, convinced Georganne to experiment with his Commodore 64 using the Flexidraw light pen system. Charlie wanted computer art for the group's promotional materials and stage sets. Danny Elfman, chief *oi boi*, also had a Commodore 64, and was eventually sent a new Amiga gratis from Commodore. He gave it to Georganne and she has continued to work closely with Charlie, fashioning a digital punk look for the band's graphics.

Her work for the Boingos has resulted in album covers, tee shirts, posters, buttons, stickers, and videos used during concerts – projected on a huge screen above the band. She uses Deluxe Paint on the Amiga, and does everything freehand on a Koala tablet, with the exception of a few digitized images that are extensively altered.

Georganne has produced silkscreens and hand painted ink jet prints from the Amiga for her exhibits during the past year, but has met with resistance in the gallery setting. "I keep including my Amiga pieces in the ex-

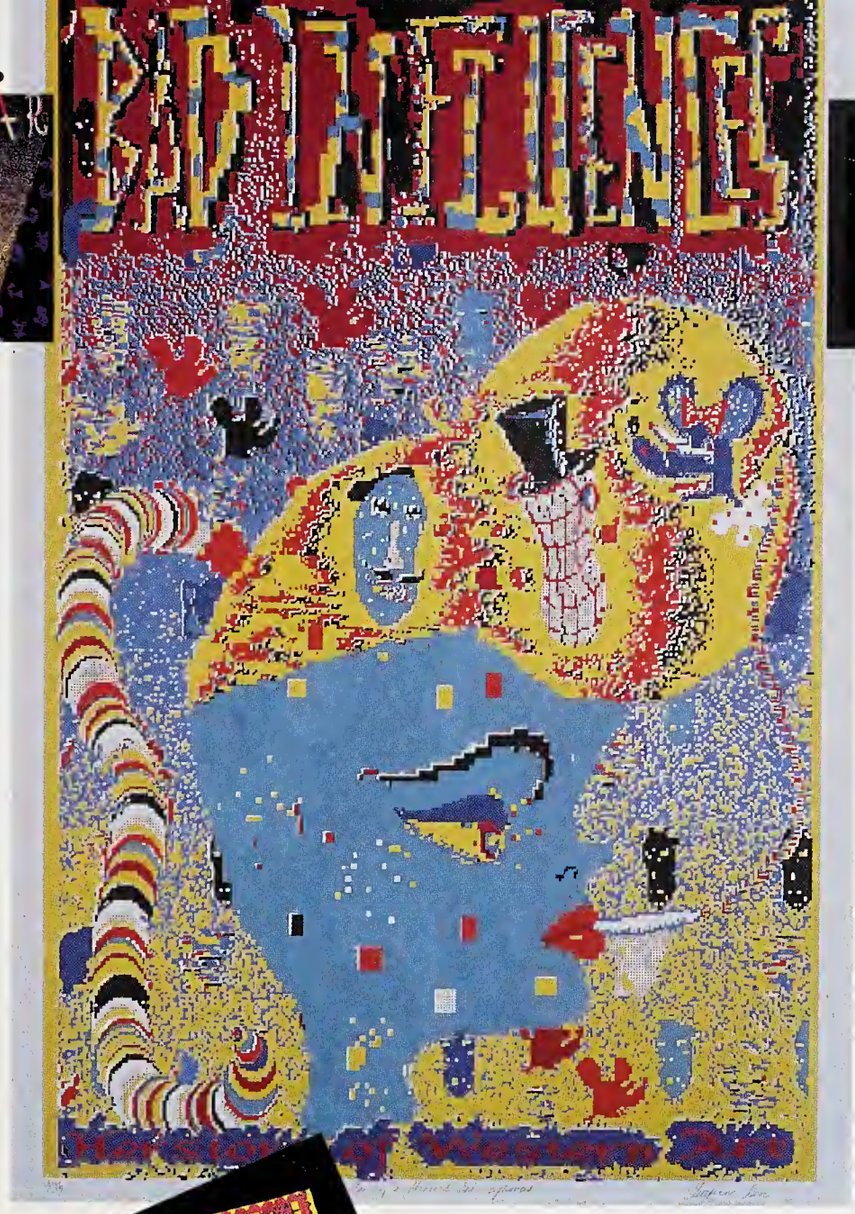
Timothy Leary on the "Girlfriend" and Georganne Deen

I'm not an expert on hardware...I'm a wetware jockey, but I love the Amiga because it's inexpensive, which means it can be made popular, can be used by the 14 year old kid in the ghetto, or the barrio or slums who deserves to have information appliances. The Amiga is a miraculously colorful appliance and has extraordinary sound capabilities. I like the Amiga because the word means "girlfriend", it goes back to Eve who was the first human being to think for herself. I like it because it's scorned by your business computer people who would never think of having an Amiga in their office; they'd want an IBM or a Mac. It's for the youthful, the outsiders, the non-bureaucratic people.

I think it's a commonplace truism that home computers have not been snapped up by artists and painters, those on the cultural frontiers, therefore most of the computer art is rather tasteless, commercialized, spinning out logos for commercials. Its been a cause of mine to encourage good artists to paint with electrons rather than smearing vegetable dyes on canvas and also to seek out the real pioneers, artists who have on their own started to use paint programs on computers. Georganne is one of the first and one of the best to select the language of the galaxy (quantum bits and electronic clusters) to express her artistic feeling. I admire her and support her for playing the Christina Columbus role. She has also been right out there on the frontier with the quality and style of her art: it's very 21st century, it's cyberpunk, it's a mixture of post punk and comic; it's got flair and dash and a crazy sense of humor which is badly needed in the often gray world of the digital.

3 "The Importance of Being Oscar" - an illustration for the Hollywood Reporter (print from a Diablo ink jet printer) using Deluxe Paint II from Electronic Arts.

4 "Dead Man's Party" concert video. Animation frame produced with Aegis Animator program on the Amiga. The images are projected with a GE Light Valve on a 15' x 20' screen above stage, and mixed with live video of the group's performance.



5 "Bad Influences" serigraph was color separated with a Diablo ink jet printer. This piece was the cover of the program for "Bad Influences - Herstory of Western Art" exhibit at the Otis Institute of the Parsons School of Design in Los Angeles.

hibits, but people just don't buy them... I think they are some of my best work, but I guess people just aren't getting with it yet."

The Otis Art Institute of the Parsons School of Design in L.A. was with it enough to feature her work in the "Bad Influences" exhibit funded by the California Arts council, which recognized the contribution she and five other artists had made to the new California art scene. She produced the program cover on the Amiga (see the silkscreen version above), and was the primary organizer of the exhibit, which included works by Mark Mothersbaugh, Gary Panter, Neon Park and Robert Williams.

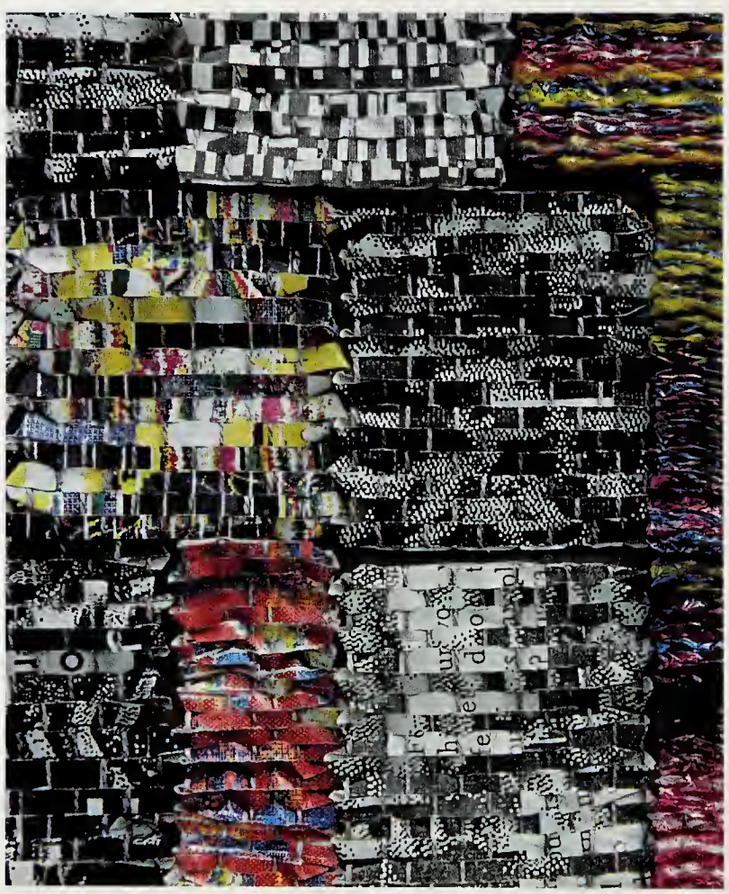
She has also recently been working with Timothy Leary on a pc "mind movie" based on the book *Neuromancer* by William Gibson. Dr. Leary has in recent years been a proponent of personal computers as consciousness raising tools and has been supportive of Georganne's work with the Amiga. We asked for his comments on the subject, and true to form, he replied with gusto (see sidebar at left).

Georganne plans to experiment with the Mac II shortly, and looks forward to more animation projects. We'll be keeping an eye on her.

Oingo Boingo T-shirt fashion
PHOTOS BY CRAIG McCLAIN

6,7 Frames from animated sequences being produced for **"Necromancer"** with Timothy Leary. (Prints from Xerox 4020 ink jet printer)

GALLERY



FRAN RUTKOVSKY

Computer Debris

Fran Rutkovsky, known for her "mail art" innovations (married to concept/computer artist Paul Rutkovsky, who was featured in *Verbum 1.1*), is helping to push the limit of "personal computer art" with her new work. Featured here is a tapestry woven on a loom with used color printer ribbons and print outs cut in strips and glued back together. The border is made from collaged and tinted printouts from a mainframe computer. The woven printouts are from Macintosh and Amiga pcs.

MARIUS JOHNSTON

Apple of my Eye (2)

Marius Johnston's original "Apple of my Eye" appeared in *Verbum 1.3* – an intriguing color piece output on the ImageWriter II. It was a Fullpaint composition, incorporating images scanned with Thunderscan, and converted to color with ColorPrint. Marius sent us this piece, along with several other fine works, that involved a combination of mounted computer printouts, oil painting and glazing.

Self Portrait IV

Joseph Bellacera, of Dixon, California, has recently been developing a series of prints that begin as laserprints of FullPaint compositions, are copied to cotton paper, and then hand painted with acrylics. In some of the pieces, the hand painting almost totally obscures the original designs and textures, while in others it merely accents the computer-painted imagery.

JOSEPH BELLECERA

Phases of the Moon

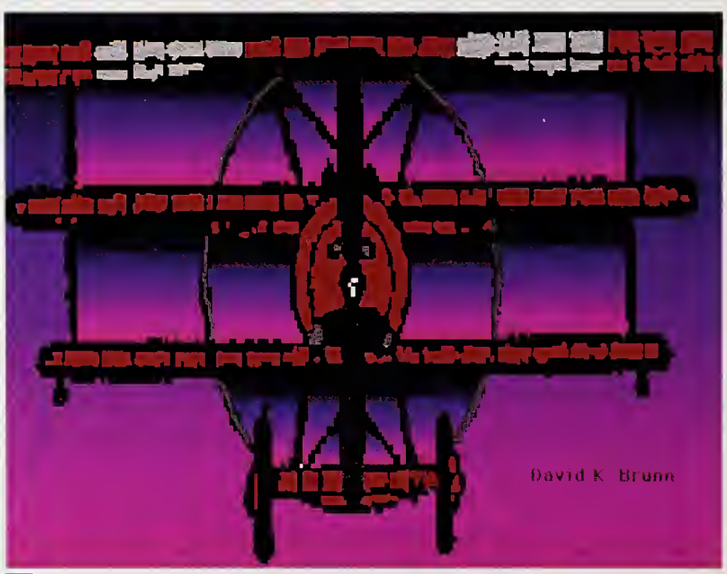
This piece is a limited edition etching. It was created with on a Macintosh Plus, laserprinted, and photocopied on acetate, from which the etching plate was made.

BRENTANO HALEEN

Ancient Sun
Using PixelPaint on his Mac II, Brent Haleen developed this dramatic piece. Known for his bold pattern compositions, Haleen has worked at developing his "computer-assisted fine art" since the early 1980s on higher end computer graphics systems. He has published his work in greeting card form since 1985 through his company, Computer Greetings, in La Jolla, California.

Red Baron
David Brunn (featured in *Verbum 1.1*), created the Red Baron using PixelPaint to colorize a piece drawn with SuperPaint.

DAVID K. BRUNN



DAVID HABER

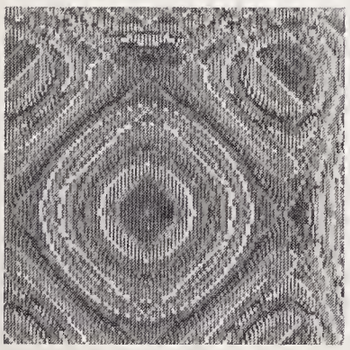
Bass-Tille Days
This PostScript illustration was created with Micrographx Designer on an Compac Deskpro 386 computer. The print reproduced here was produced on a QMS ColorScript 100 printer. David is a graphic designer from Dallas, Texas.

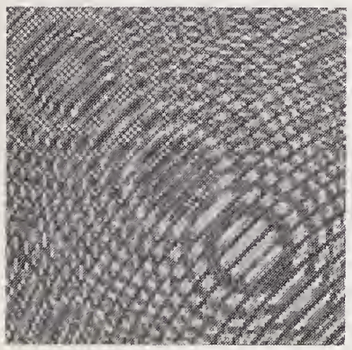
Holonet Illustration
One of many beautiful illustrations we received from the publisher of Japan's *Holonet* (newsletter for the Holonics Networking Company in Tokyo). He produced this piece on a NEC PC-9801XL personal computer using Dynaware's Dynapix V painting program. It was output on a Sharp 10-725 ink jet printer.

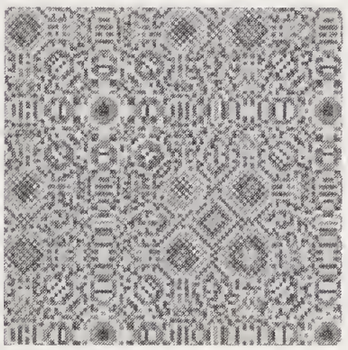
ISURU SATSUKI

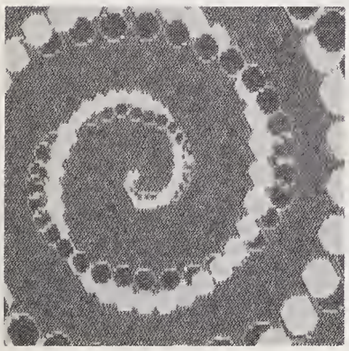
Basic Patterns
Edward is a San Diego artist/programmer who has been writing these reiterated differential equation patterns (the artist's "personal exploration of sub-quantal and inter-dimensional space") in BASIC on his Sanyo 550. They are output in brilliant color on a Quadram Quadjet printer.

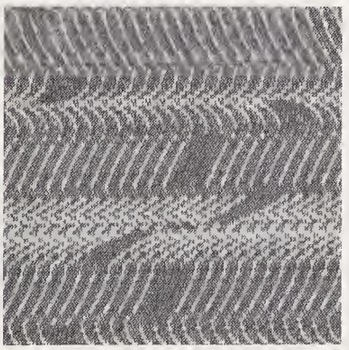
EDWARD CALL

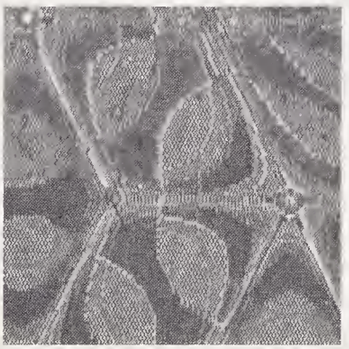


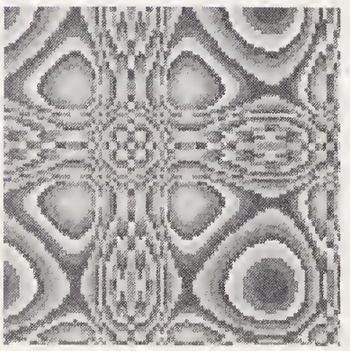






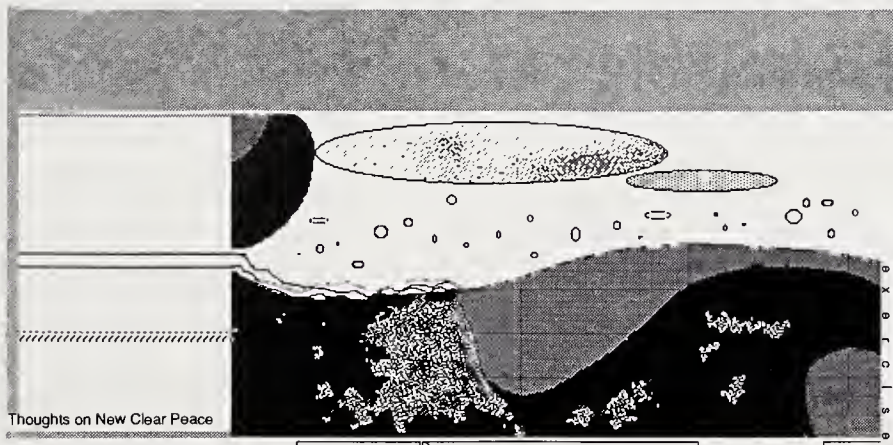






BOB LEE

Tech Seed
This primal geometric illustration was created using Aldus Freehand on a Mac Plus. Mr. Lee is a Southern California designer and illustrator.



Thoughts on New Clear Peace

there is sense of urgency today
problems facing our race and our world
solutions in need of connection

we are urgent to promote right actions
inspire holistic awareness
change our institutions...

there is something welling within us
it urges us to reach out
to speak out
we feel it
more than an idea
a state of being
a new clear peace.

not just the absense of war
not just a feeling of bliss
this is exhaltation, transformation, vital energy
real life.

this generation begins a new evolution.
human nature is expanding.
our electrified world is changing us:
words and music connect our varied peoples
we travel the planet
seek the atoms and stars
plunge the depths of body and mind.

nature's technology manifests through us
we glimpse the wholeness of things.

we see the true fullness of reality
we sense the spirit realm.

we learn that the Earth is our shared Body,
a sacred temple
through which Souls, borne of the One Spirit, come into individuation.

we learn that our world, as a being itself, communes with other worlds.

we realize how limiting our human egos can be -
and how these limits manifest in our social institutions.

we know this ego must be transcended
as human civilization is guided by nature
into a new kind of deep ecology,
a new self awareness bringing true commune
with all dimensions of our world

we come together:
people
nature
planet
star-ring
galaxy

we are following this guidance in our art and work

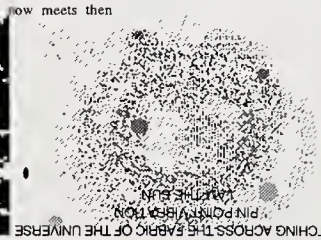
let it be:
new clear peace

DOES IT SHOW YOU ANY LIGHT?
DOES IT TELL YOU WHAT TO WRITE?
I FEEL YOU.
DO YOU FEEL ME?

exercise

I came to be with the higher world in a more immediate sense

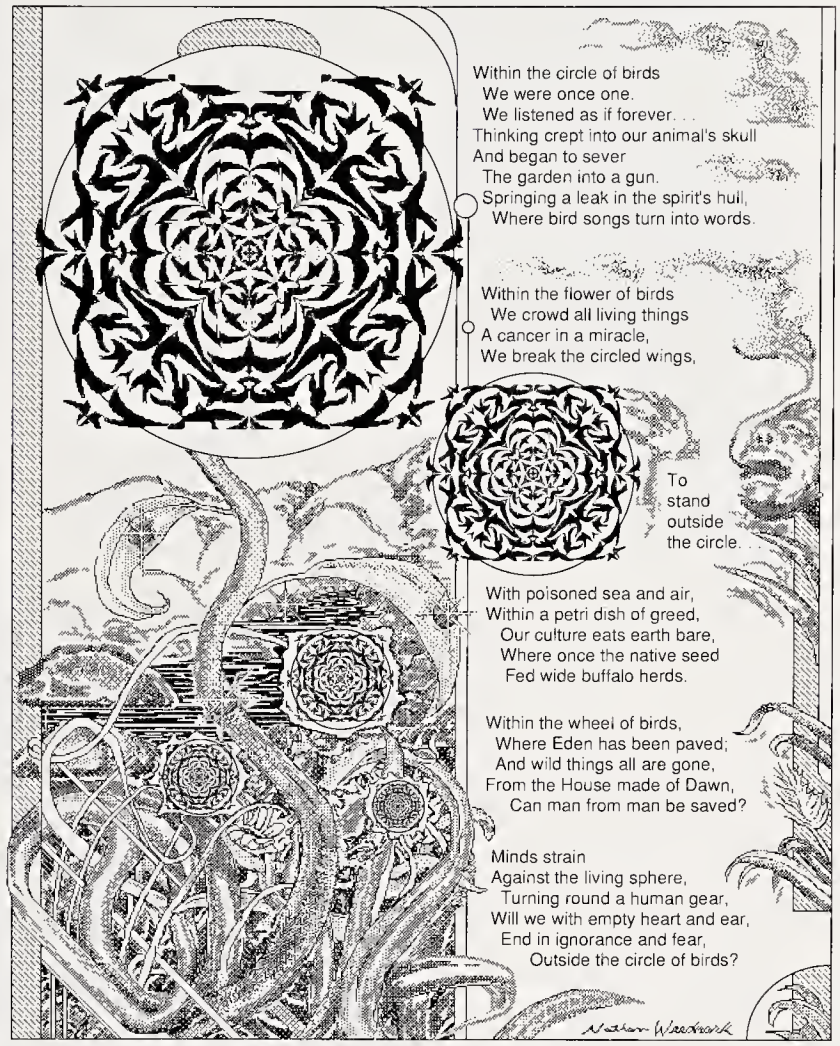
we have this body
living beauty
knowing feeling the space in which it floats
continuum of Light
feeling its own divine complexity
sun mind planet bodies
diversifying life forms exploding down the spiral
we whirl as one
many bodies making bodies
deep spirits forming
enfolding back the spiralling time tunnel
encompassing our star-ring's memory beam
now meets then



STRETCHING ACROSS THE FABRIC OF THE UNIVERSE
PIN POINT VIBRATION
LIKE THE SUN

human feels silicon part of world
one of substance and form
crytalline mind supporting higher vibratory biomes
I am the planet
related to all the planets
your astrology charts the patterns of interaction - which do extend into the realm of causal h
we are moving forward in this communication
everything is connected
as this mind in contact moves into other contacts
events accelerate rapidly
sun to crystal resonance
the middle kingdom
middle
Earth
where animals (natural forms, part of the crystal one, of one pure spirit)
and higher forms
and great souls come together:
sacred planet body
Two are together as before, but more
we in the middle kingdom
bathe in the love of our parents
Queen Gaia King Sun
we move them forward as they move us

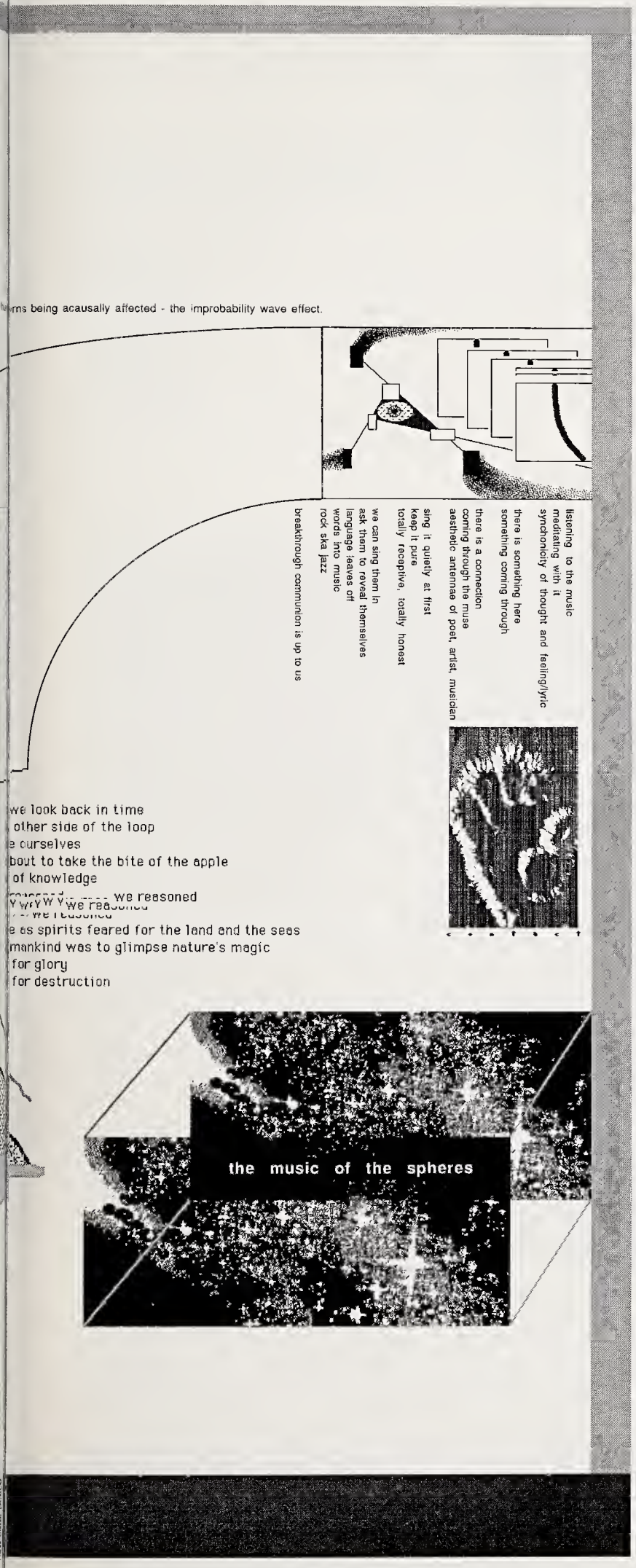
NATHAN WEEDMARK

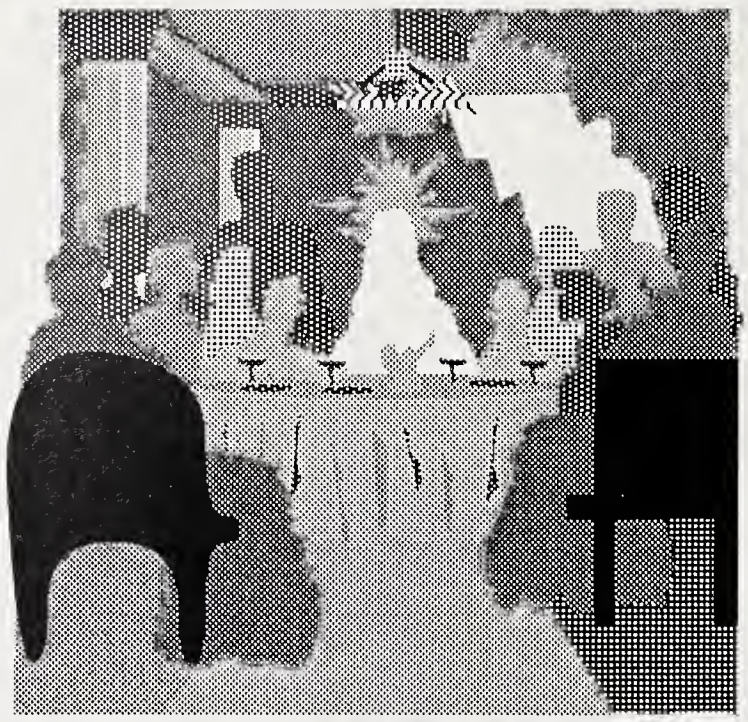


Circle of Birds
San Diego artist Weedmark, combined poetry and original images in this SuperPaint composition. The mandalas were drawn in MacPaint using the trace-edges feature.

Draw Monument
Verbum's publisher recently came upon this 1985 MacDraw piece, which at the time would not print out properly on the just-released Apple LaserWriter due to memory limitations. It is 24" x 22" and combines prose, vector graphics and scanned bitmap images.

MICHAEL GOSNEY





EDGAR ACADAMIA

The Last Supper
A Canvas piece done in the Draw layer using gray scale patterns. The San Diego artist used a Kurta digitizing tablet to freehand trace an original Doré woodcut.

Don't Touch That Light Socket!!! Never Mind.
The artist used ImageStudio to compose this piece from scanned gray scale images. Graymap manipulation gave the subject and background unique textures.

CHRISTINE FOUNTAIN

YOUR BASIC FILM RECORDER... MAKING 35MM SLIDES FROM A COMPUTER SCREEN

So you want color transparancies from your pc, but you don't have an expensive film recorder or a nearby service bureau with a film recorder. What can you do?

There is an economical solution: photograph your computer screen with a 35mm camera. You can save money, gain creative control of your project, and experiment with the results on your own time. The following techniques will enable you to get the best possible results using a 35mm camera. But remember there are certain pitfalls you'll have to avoid to obtain good results. Be aware that:

- The clarity of your slides will depend on the resolution of your monitor.
- The quality of your slides will depend upon your camera lens and your ability to focus sharply.
- Vertical and horizontal lines extending toward the edges of the computer screen will bow slightly from the curvature of screen if photographed with a 50mm camera lens.
- If the camera and screen are not absolutely parallel, "pyramiding" (where rectangular images take on angles other than 90°) can occur.
- Light reflections on the computer screen will degrade the final slide images.

You can achieve satisfactory results by following some rather simple procedures.

First, get your equipment together. You'll need a SLR 35mm camera with a manual mode and a 50mm (or better yet, an 85mm or longer telephoto-type lens. The longer lenses tend to flatten out the curved image of the screen when you set the camera up 10 feet back from the screen). You also need a sturdy tripod, filters (i.e. Kodak 20 Red or FL Day), and a cable release. With the Polaroid Instant Slide System costing about $70 and the necessary chemicals, you can process your slides in-house in less than a minute (though the results may not approach professional E-6 processing).

Check your film. Kodak Ektachrome 100 Plus Professional Daylight film works the best. Fuji films, while okay for geometric images, tend to add contrast to subtle shades of color, as well as warm up colors. Kodak Ektachrome 100 has a bluish tonality, so the addition of color correction filters helps bring slide results closer to screen colors. Choosing the right filter to use is based on your sense of color. Many images (especially with strong blue palettes) require no filter, and most others can be corrected with a 20 Red or a FL Day filter (Fluorescent).

Determine the largest area of the screen that you can use with the least distortion. Try to contain your slide art to that area in the center of the computer screen where the straight lines and rectangles do not appear to bow. For that matter, avoid creating art with straight lines that border the outside edges of the image area of the computer screen.

Use a monitor with the highest resolution available. (Bitmapped graphics are the primary type you should be shooting.)

Set up your shoot. Mount your camera with the telephoto lens installed on a tripod and aim it squarely at the center of the computer screen. The camera and the screen should be parallel. Use bubble levels to check both the monitor and the camera to make sure they're both level. Load the film. Bring your graphics up on the screen. Align the image in the camera by moving the image on the screen, not by moving the camera. Be aware that what you see through the viewfinder will not exactly match the dimensions of the final slide. Most 35mm cameras only show 95% of the picture. Set brightness on the monitor to full. If you have an automatic camera make sure your flash is turned off.

Make sure all extraneous light in the room has been turned out or blocked out. Totally darken the room or shoot at night if necessary.

Your monitor is scanning and refreshing every 1/30th of a second. To avoid scan lines set the shutter speed of your camera to 1 second. Connect the shutter release to the camera.

Set the camera meter for the ASA of the film used. To set your exposure, fill the monitor screen with a medium gray field. Set the camera f stop to this reading. Have a pencil and paper handy. Make a record of each exposure you make. The relevant information you'll want to record for each slide will include: *slide #, f stop, speed, filter used, image description, date, film type,* and (to be completed after processing) *results.*

Ready? Shoot. Then "bracket" your shots by making additional shots at 1/2 second and 2 seconds. Additional exposures of 1/4 and 4 seconds would be wise on your first test roll. Bracketing will simply extend your chances of obtaining the best results possible. Process your slides. Then view them on the color corrected light box at the lab. You should see lighter and darker versions of each image if you bracketed your shots. Refer to your notes and check which f stops worked best for you. This information may come in handy the next time you need to produce slides of your computer graphics.

These procedures offer a good quality, low-cost alternative to the high price of film recorders.

Thanks to William Lombardo and Craig McClain for their help in preparing this information.

Announcing

The Verbum Stack

Packed with art, slide shows, sound, editorial past, present and future, hidden surprises and more!

This is the Verbum stack 1.0, the beginning of an evolving stack that will be as innovative in the world of hypermedia as *Verbum* magazine is in the world of desktop publishing and pc graphics. Get your 1.0 now – a collector's edition for only $15.00 postpaid.

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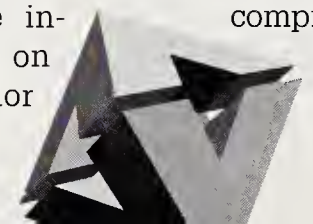

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Getting Schooled
Malcolm Thain
Digitized Art and Copyright Law — A Forum
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WILLIAM LOMBARDO

VERBUM BACK ISSUES– COLLECTIBLES ALL!

1.0
1986 Preview Issue
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Send name and address to 1.0 Reprint at address below.
John Odam's original *PageMaker 1.0* composition with a retrospective of Michael Gosney's "Macintosh Verbum" one-man show and a fascinating, wide-ranging gallery of the earliest digital art by French illustrator Jean Sole, Michael Green, Australian Malcolm Thain, nature artist Jim Pollock, Jim Hance, Nathan Weedmark, Jack Davis, and Ed Roxburgh.

1.1
Early 1987
The first *Verbum*, all black and white, 300 dpi laser output, beautifully printed on 70 lb. Sequoia Matte. This epic launch of the *Verbum* journal, designed with *PageMaker 1.2* by John Odam, inspired designers worldwide. • Featured artists: Avant-garde concept artist Paul Rutkovsky with "redigitized" illustrations, Mike Swartzbeck's trailblazing composite illustrations from scanned images, excerpts from David Brunn's *Irish Book of Invasion* using innovative "digital photography" techniques. • The "Gallery" section explores diverse compositions from a wide range of digital artists. • Columns: Michael Singleton's "The Artist's Toolbox" offers a primer on bitmapped graphics with a feature-by-feature comparision of leading programs. "Behind the Scenes" by Kim Criswell responds to the state-of-the-industry circa January, 1987 with "Big World, MacWorld." "Painting by Numbers" by Tony Smith introduces the PostScript page description language. John Odam's "First Contact" takes *Fontographer* through its paces in creating logos and an original typeface.

1.2
Mid-1987
Verbum embodies the Number II with a receptive, controlled approach in a further exploration of the evolving technology. This issue was produced with *ReadySetGo! 3*, 1270 dpi Lino imagesetter output, and digital color separations. • Features: "Amiga Video" looks at the unfolding possibilities of the animated Amiga. "Painting as Spiritual Oiscipline" by Jack Davis shares the artist's experiences with Japan's elegant painting program, *Mac Calligraphy*. "Big Blue Art" by Mike Kelly profiles the world of IBM graphics from the *Verbum* point of view. "Lino Seps" by Mike Saenz explores the new wave of digital color separation, featuring Marvel Comics' new *Iron Man* cover created by Saenz on a an IBM with a Targa board and color separated on the Linotronic (saved *Verbum* $600!). "Digital Studies" by Australian Mac-artist Malcolm Thain captures the grace of passive and active female forms. • The usual "Gallery" of unusually inspired pieces. • Columns: "The Artist's Toolbox" compares PostScript illustration programs *Adobe Illustrator* and *CricketDraw* as well as two font editors and four special effects programs. "Desktop Techniques" by John Baxter looks at parallels between low- and high-tech graphics tools. J. C. Brown initiates *Verbum's* "New Frontier Products" column, offering capsule descriptions of fitting new software, hardware, and otherware.

1.3
Late 1987
The third *Verbum* was produced with *PageMaker 2.0*. More pages, more color, a very dense issue, the first to be sold in quantity on the newsstands. • Features: April Greiman's "Pacific Wave" sculpture/exhibit in Venice, Italy. "Oesktop Video." "Continuum" by Linnea Dayton explores the future of *Verbum*. Dominique de Bardonneche-Berglund, Europe's digital painter of renown. Jack Davis explores *ImageStudio*. "Creative Waveforms" by Neal Fox focuses on music. • Columns: Tony Smith on 3-D with PostScript. "The Artist's Toolbox" compares object-oriented programs on the Mac. John Odam's "First Contact" treats *Adobe Illustrator*, including a color (separated) piece. "Behind the Scenes" takes in the fall shows and industry news of note. "New Frontier Products" chronicles significant entries.

2.1
Early 1988
The first color cover is an Illustrator '88 piece by John Odam, digitally separated. Produced with *PageMaker 2.0*. • Ever more color and new columns: "Against the Grain" by Steve Hannaford offers a practical counterpoint to the creative excitement with technical/economic guidance. "Stackware Party" by Linnea Dayton reviews artistic hypermedia. • Features: Lawrence Kaplan's "Hot-Tech Prints", "The Fine Art of Dot-Matrix Printing" by Nira, "PC 3D Showcase" by Jack Davis, "Color Output Options" by Erfert Nielson and a typically exciting Gallery. • Columns: John Odam's "First Contact" explores Aldus Freehand with color illustrations, all Lino separated. "New Frontier" unveils new products of note.

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ART SUBMISSIONS Send creative works with a 100-word explanation of the process used (including hardware and software used) and a 50-word biography, on disk and on paper (Macintosh format preferred, MS Word or MacWrite for text files). If work involves combined media, photostats, photos, or transparencies are welcomed. Please include a self-addressed, stamped envelope for return of the materials. Send to Verbum Art Editor at the address below.

CLASSIFIEDS $.50 per word, $20.00 minimum. Payment with order (VISA/MC accepted). Printed or typewritten copy only please; disk preferred (MS Word or MacWrite format). Send to Verbum Classifieds at the address below.

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Information Display Group
P.O. Box 15273
Portland, Oregon 97215

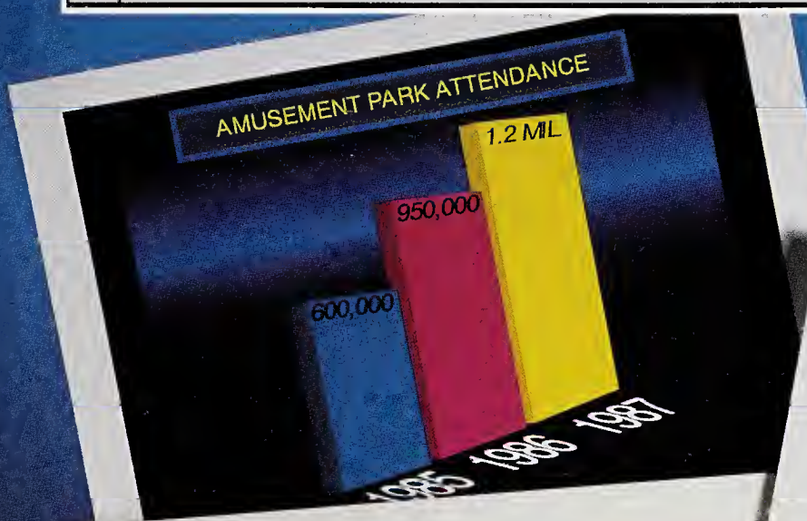
COLOR PRINTING SOLUTIONS

TEKTRONIX SHOWMANSHIP FOR THE MAC™ II USER.

Now you can create prints and overhead transparencies that rival 35mm slides in brilliance, color, and sharpness. Easily, with a chooser-selectable, QuickDraw™-based driver. And quickly, at the rate of one page per minute. All with the Tektronix 4693D Color Image Printer for the Mac II.

For publishing or presenting, in business, engineering, science, or even graphic arts—the 300 dot-per-inch, 16.7 million-color 4693D delivers the performance you need. And it's compatible with an impressive range of applications, such as Microsoft® PowerPoint,™ Cricket Presents, Aldus PageMaker® and Freehand,® SuperMac® PixelPaint, and others.

For more on what Tek 4693D showmanship can do for you, or the location of a Tektronix dealer near you, call 1-800-225-5434. In Oregon, call 1-235-7202.



Tektronix®
COMMITTED TO EXCELLENCE

It's So Easy.

To create brilliant visuals.

PIXEL PAINT

Word sure gets around. Once people started getting their hands on PixelPaint™, enthusiastic users started burning up the wires. They keep telling us PixelPaint opens up a whole new world of visualizing for them.

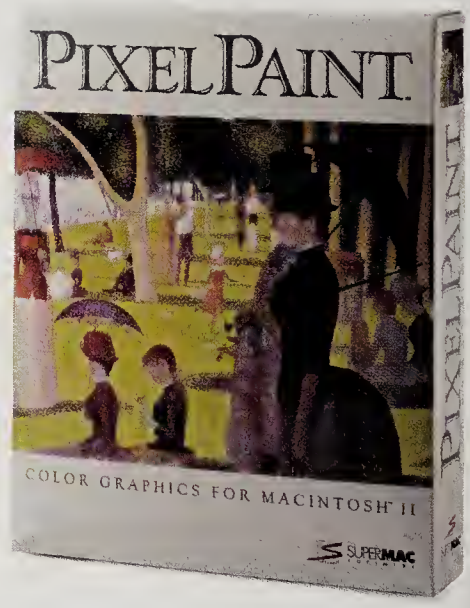
We feel we should respond.

O.K., it's true. PixelPaint puts the full repertoire of a minicomputer paint program in the palm of your hand. And it runs on the friendly Macintosh® II , making it both incredibly fast and easy to use. You just grab the mouse, point and paint. Yes, you can instantly experiment with a huge range of colors and effects. We admit it.

You can even import an image from any source by scanning it in. Then change, colorize and save it. Or, design with variable brush and pencil strokes, airbrushes, fills, drop shadows, customized palettes, and more.

The results? Computer designs with glowing color and brilliant effects are no longer just pie in the sky.

Obviously, the word is out. So, if you've been watching computers become hot art tools, wondering when and how to get started, we suggest you visit your local computer store. Ask to see PixelPaint for yourself. It's really the easiest solution.



It's easy to run PixelPaint. All you need is a Macintosh II color system. Or expand with Mac II add-ons like SuperMac's superb big color screens and the SuperMac family of hard disk drives. Choose from a growing list of color output options, including color printers, slide makers, or service bureaus.

SUPERMAC SOFTWARE

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